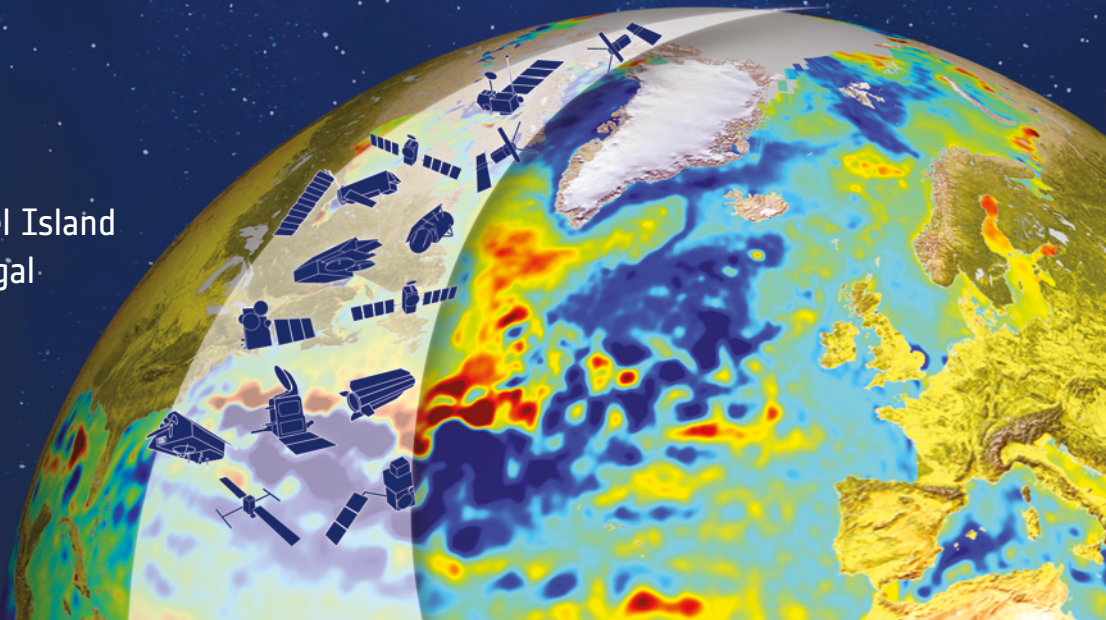


**→ 25 YEARS OF PROGRESS
IN RADAR ALTIMETRY
SYMPOSIUM**

PROGRAMME

24–29 September 2018
Ponta Delgada, São Miguel Island
Azores Archipelago, Portugal



OVERVIEW PROGRAMME

SUNDAY 23 SEPTEMBER 2018				
9:30-12:30			TRAINING: ESA Research and User Support (RUS) Service Sala Lagoa do Congro	
12:30-14:00			Lunch Teatro Café	
14:00-17:00			TRAINING: ESA Research and User Support (RUS) Service Sala Lagoa do Congro	
15.00-18.00	PRE-REGISTRATION for 25YPRA Foyer			

MONDAY 24 SEPTEMBER 2018				
08:00-08:55	REGISTRATION Foyer			
08:55 -13:00	SYMPOSIUM PLENARY SESSION: Opening, Keynote Presentations			
13:00-14:30	Lunch			
14:30-16:10	Open Ocean #1: Large-Scale Ocean Circulation and Sea-Level Session	Land Processes and Inland Water #1: Lakes and Reservoirs	Cryosphere #1: Ice Sheet, Glaciers, Ice Cap	IDS Workshop - Session #1 DORIS Network and Constellation: Status and Evolution
16:10-16:40	Coffee Break			
16:40-18:20	Open Ocean #2: Tides, Internal Tides, Internal Waves	Land Processes and Inland Water #2: Methods and Rivers	Cryosphere #2: Sea Ice and Polar Oceanography	IDS Workshop - Session # 2 IDS Processing and Plans for the Next ITRF
18:20-19:30	ICE BREAKER RECEPTION			
	Auditorium	Lagoa Das 7 Cidades	Lagoa Do Congro	Lagoa Do Fogo

OVERVIEW PROGRAMME

TUESDAY 25 SEPTEMBER 2018

8:30-9:20	Open Ocean #3: Mesoscale – Smaller-Scale Currents	Land Processes and Inland Water #3: Rivers (cont'd), Wetlands and Soil Moisture	Altimetric Contributions to Gravity Field, Marine Geodesy, Bathymetry Modeling	
9:20-10:10			Precise Orbit Determination	
10:10-10:40	Coffee Break			
10:40-12:20	25 Years Progress in Radar Altimetry & IDS Poster Session			
12:20-14:00	Lunch			
14:00-15:40	25-Year Altimetric Record #1: Building the Climate Record: Accuracy and Precision over 25 Years of Altimetry Data	Synergy between Altimetry, Other Data and Models in Support of Operational Oceanography #1	Advances in our Understanding of Coastal Processes #1	IDS Workshop - Session #3 Precise Orbit Determination
15:40-16:10	Coffee Break			
16:10-17:50	25-Year Altimetric Record #2: Global Mean Sea Level as a Key Climate Indicator	Synergy Between Altimetry, Other Data and Models in Support of Operational Oceanography #2	Advances in our Understanding of Coastal Processes #2	IDS Workshop - Session #4 Research Activities and New Applications

WEDNESDAY 26 SEPTEMBER 2018

8:30-10:10	25-Year Altimetric Record #3: Ongoing Scientific and Technical Challenges	Synergy Between Altimetry, Other Data and Models in Support of Operational Oceanography #3	Outlook #1: Sea Level and Ocean Circulation: Continuity and Improved Resolution	IDS Governing Board Meeting
10:10-10:40	Coffee Break			

Auditorium	Lagoa Das 7 Cidades	Lagoa Do Congro	Lagoa Do Fogo

OVERVIEW PROGRAMME

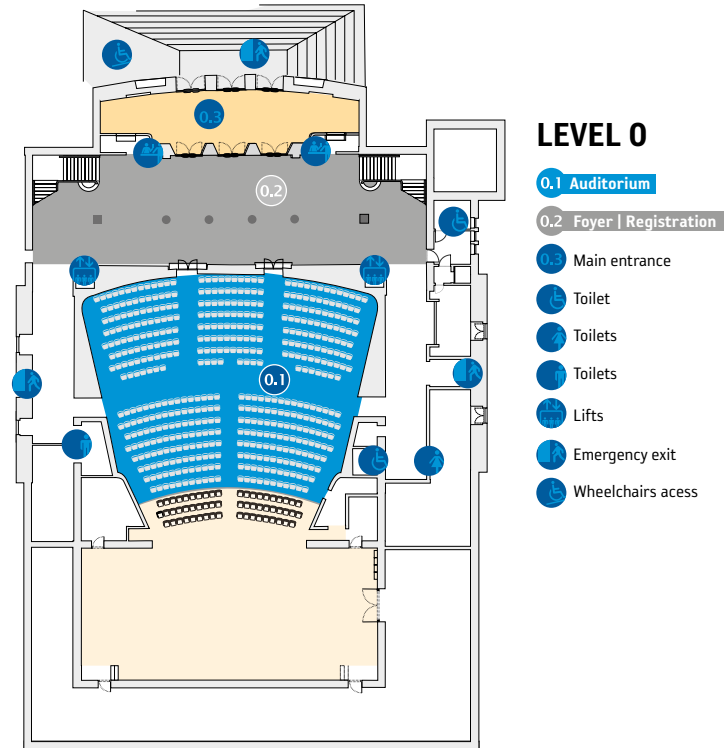
WEDNESDAY 26 SEPTEMBER 2018				
10:40-12:20	Advances in Our Understanding of Wave Observations and Their Applications	Outreach, Education and Altimetric Data Services	Outlook #2: Sea State, Polar Oceans and New Techniques	IDS Governing Board Meeting
12:20-14:00	Lunch			
14:00-15:40	SYMPOSIUM PLENARY SESSION: Keynote, Roundtable, Summary & Closing			
15:40-16:10	Coffee Break			
16:10-18:20	SYMPOSIUM PLENARY SESSION ctd: Keynote, Roundtable, Summary & Closing			
18:20-19:30	Free time to freshen up before the Gala Dinner			
19:30-23:00	GALA DINNER Coliseo Micaelense			

THURSDAY 27 SEPTEMBER 2018				
8:30-10:10	OSTST Opening Plenary Session			
10:10-10:40	Coffee Break			
11:00-12:30	OSTST Opening Plenary Session con't			
12:30-14:00	Lunch			
14:00-15:45	Instrument Processing: Measurement and Retracking Part 1	Precision Orbit Determination Part 1	Outreach, Education and Altimetric Data Services	
15:45-16:15	Coffee Break			
	Auditorium	Lagoa Das 7 Cidades	Lagoa Do Congro	Lagoa Do Fogo

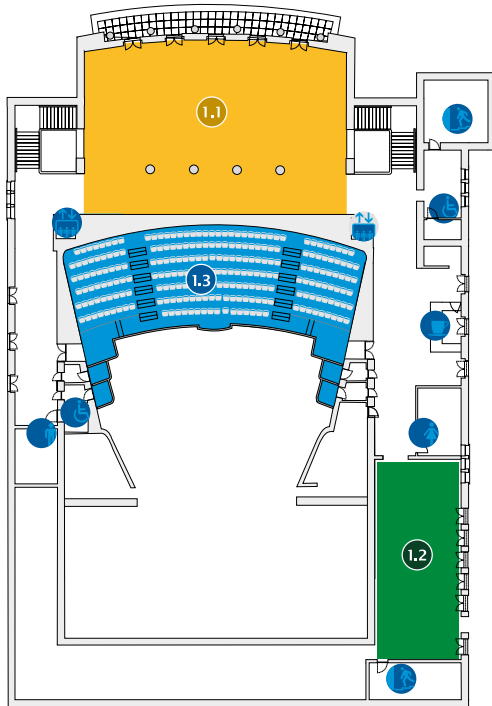
OVERVIEW PROGRAMME

SATURDAY 29 SEPTEMBER 2018	
9:30-10:30	TRAINING: Using the Sentinel-3 Altimetry Copernicus Marine Data Stream
10:30-10:50	Coffee Break
10:50-12:50	TRAINING: ESA GOD SARvatore On-Line and On-Demand Processing Service for the Advanced Exploitation of Sentinel-3 and Cryosat-2 Altimetry Data
Lagoa Do Congo	

MAP OF THE EVENT



MAP OF THE EVENT



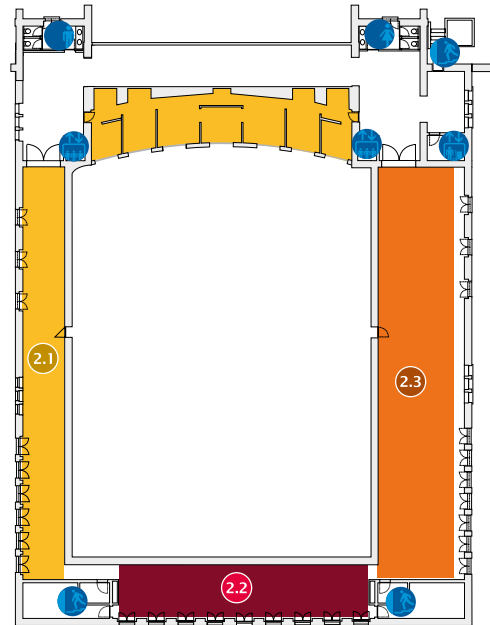
LEVEL 1

1.1 Poster and Exhibition Area

1.2 Lagoa do Congro

1.3 Auditorium upper floor

- Bar
- Toilet
- Toilets
- Toilets
- Toilets
- Lifts
- Emergency exit
- Wheelchairs access



LEVEL 2

2.1 Poster Area

2.2 Lagoa do Fogo

2.3 Lagoa Das 7 Cidades

- Toilets
- Toilets
- Lifts
- Emergency exit
- Wheelchairs access

8:00 - 9:00 | Registration

9:00 - 13:00 | Plenary Opening Session **Chairs: Jérôme Benveniste, ESA - Pascal Bonnefond, Observatoire de Paris, SYRTE**

09:00 - 09:10	Introduction and Scope of the Symposium	Jérôme Benveniste	ESA	
09:10 - 09:20	Welcome from ESA	Maurice Borgeaud	ESA	
09:20 - 09:30	Welcome from CNES	Juliette Lambin	CNES	FR
09:30 - 09:40	Welcome from the Azorean Government	Gui Menezes	Secretary for the Sea, Science and Technology	PT

Title		Presenter		
09:40 - 10:00	Keynote: Early Development of Satellite Altimetry	Byron Tapley	University of Texas at Austin	USA
<i>Byron Tapley¹ ¹University of Texas at Austin, Austin, TX, United States</i>				
10:00 - 10:20	Keynote: Legacy Achievements of the First 25 Years of the TOPEX/Poseidon and Jason Series	Eric Leuliette	NOAA	USA
<i>Eric Leuliette¹, Pascal Bonnefond², Remko Scharroo³, Josh Willis⁴ ¹NOAA Lab. for Satellite Altimetry, College Park, United States, ²Observatoire de Paris-SYRTE, Paris, France, ³EUMETSAT, Darmstadt, Germany, ⁴Jet Propulsion Laboratory, Pasadena, United States</i>				
10:20 - 10:30	Keynote: Assessment of the Global Mean Sea Level Budget over the Altimetry Era: an International Initiative	Anny Cazenave	LEGOS ISSI	FR
<i>Anny Cazenave^{1,2}, Benoit Meyssignac¹, The WCRP Global Sea Level Budget Group ¹LEGOS, Toulouse, France, ²ISSI, Bern, Switzerland</i>				
10:30 - 10:40	Keynote: A 25-Year Record of Global Mean Sea Level Change: What Have We Learned?	Steven Nerem	University of Colorado	USA
<i>Robert Steven Nerem¹, Anny Cazenave² ¹University Of Colorado, Boulder, United States, ²LEGOS, Observatoire Midi-Pyrénées, Toulouse, France</i>				
10:40 - 11:00	Keynote: Global Ocean Circulation from Satellite Altimetry: Progress and Future Challenges	Lee-Lueng Fu	JPL	USA
<i>Lee-Lueng Fu¹ ¹Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States</i>				
11:00 - 11:20	Keynote: Satellite Altimetry and the Copernicus Marine Service: Status and Perspectives	Pierre-Yves Le Traon	Mercator Ocean	FR
<i>Pierre-Yves Le Traon¹ ¹Mercator Ocean, Ramonville st Agne, France</i>				

	Title	Presenter		
11:20 - 11:40	Keynote: Progresses of Altimetry for Marine Ecology: from a Dataset for Biophysical Studies, to a Tool for Conservation Policies	Francesco D'Ovidio	LOCEAN-IPSL	FR
	<i>Francesco d'Ovidio¹, Yoav Lehahn², Cédric Cotté³, Marina Lévy¹, Christophe Guinet⁴, Philippe Koubbi⁵ ¹CNRS LOCEAN-IPSL, Paris, France, ²Dep. of Marine Geosciences, Univ. of Haifa, Haifa, Israel, ³National Museum of Natural History, LOCEAN-IPSL, Paris, France, ⁴CNRS - CEBC, Chizé, France, ⁵Sorbonne Universités, UPMC, Paris, France</i>			
11:40 - 11:50	Keynote: The Ocean Mean Dynamic Topography: 25 Years of Improvements	Marie-Hélène Rio	CLS	FR
	<i>Marie-Helene Rio¹, San ine Mulet¹, Gerald Dibarboure², Nicolas Picot² ¹CLS, Ramonville Saint Agne, France, ²CNES, Toulouse, France</i>			
11:50 - 12:00	Keynote: Twenty-Five Years of Progress in Sea Floor Mapping by Satellite Altimetry	Walter Smith	NOAA	USA
	<i>Walter Smith¹, David Sandwell², Karen Marks³, Ole Andersen³ ¹Noaa Laboratory For Satellite Altimetry, College Park, United States, ²Scripps Institution of Oceanography, La Jolla, United States, ³Danish Space Center, Copenhagen, Denmark</i>			
12:00 - 12:20	Keynote Coastal Altimetry: Assimilating Altimeter Observations in a High-Resolution Shelf-Seas Model – The Met Office 1.5km European North-West Shelf Forecasting	Robert King	Met Office	UK
	<i>Robert King¹, Matthew Martin¹, James While¹ ¹UK Met Office, Exeter, United Kingdom</i>			
12:20 - 12:40	Keynote: CryoSat-2 for Inland Water Applications – Potential, Challenges and Future Prospects	Cécile Kittel	Technical University of Denmark	DK
	<i>Cecile M. M. Kittel¹, Liguang Jiang¹, Raphael Schneider^{1,3}, Ole Baltazar Andersen², Karina Nielsen², Peter Bauer-Gottwein¹ ¹Department of Environmental Engineering, Technical University Of Denmark, Kgs. Lyngby, Denmark, ²National Space Institute, Technical University of Denmark, Kgs. Lyngby, Denmark, ³Geological Survey of Denmark and Greenland, Copenhagen, Denmark</i>			
12:40 - 12:50	Keynote: Polar Altimetry	Duncan Wingham	NERC	UK
	<i>Andrew Shepherd¹, Duncan Wingham², Alan Muir², Andy Ridout², Lin Gilbert², Mal McMillan¹, Rachel Tilling³, Hannes Konrad¹, Tom Slater³, Ines Otosaka¹, Anna Hogg¹, Noel Gourmelen³ ¹CPOM, Leeds, United Kingdom, ²NERC, Swindon, United Kingdom, ³CPOM, London, United Kingdom, ⁴University of Edinburgh, Edinburgh, UK</i>			
12:50 - 13:00	Keynote: The Younger, Thinner, Faster Arctic Sea Ice Cover: Tracking Change over Fifteen Years	Sinead Louise Farrell	University of Maryland / ESSIC NOAA	USA
	<i>Sinead Louise Farrell^{1,2}, Jennifer Hutchings³, Kyle Duncan^{1,2}, Joshua McCurry^{1,2} ¹University of Maryland / ESSIC, College Park, United States, ²NOAA Laboratory for Satellite Altimetry, College Park, United States, ³Oregon State University / CEAS, Corvallis, United States</i>			

13:00 - 14:30 **Lunch****14:30 - 16:10 | Parallel Sessions****AUDITORIUM** **Open Ocean #1: Large-Scale Ocean Circulation and Sea-Level Session | Chairs: Eric Leuliette (NOAA) - Jacques Verron (IGE)**

	Title	Presenter		
14:30 - 14:50	Keynote: Global Sea Level Budget Assessment: Preliminary Results From ESA's CCI Sea Level Budget Closure Project	Anny Cazenave	LEGOS	FR
	<i>Martin Horwath¹, Anny Cazenave², Hindumathi Kulaippan Palanisamy², Ben Marzeion³, Frank Paul⁴, Raymond Le Bris⁴, Anna Hogg⁵, Inès Otosaka⁵, An ew Shepherd⁵, Petra Döll⁶, Denise Caceres⁶, Hannes Müller Schmied⁶, Johnny A. Johannessen⁷, Jan Even Øie Nilsen⁷, Roshin P. Raj⁷, René Forsberg⁸, Louise Sandberg Sørensen⁸, Valentina R. Barletta⁹, Per Knudsen⁹, Ole Baltazar Andersen⁹, Heidi Villadsen⁹, Christopher John Merchant⁹, Claire Rachel Macintosh⁹, Christopher Old⁹, Karina von Schuckmann¹⁰, Benjamin Gutknecht¹, Kristin Novotny², An eas Groh¹, Jérôme Benveniste¹¹ ¹Technische Universität Dresden, Dresden, Germany, ²LEGOS, Toulouse, France, ³University of Bremen, Germany, ⁴University of Zurich, Switzerland, ⁵University of Leeds, UK, ⁶Goethe University Frankfurt, , Germany, ⁷Nansen Environmental and Remote Sensing Center, Bergen, Norway, ⁸DTU Space, Lyngby, Denmark, ⁹University of Reading, UK, ¹⁰Mercator Ocean, Toulouse, France, ¹¹ESA ESRIN, Frascati, Italy</i>			
14:50 - 15:10	Keynote: Causes of Sea-Level Variability: Oceanic Chaos Versus Atmospheric Forcing	Thierry Penduff	CNRS - IGE	FR
	<i>Thierry Penduff¹, Sally Close¹, Stéphanie Leroux^{2,1}, Ixetl Garcia-Gomez¹, Guillaume Sérazin^{3,1}, Jean-Marc Molines¹, Bernard Barnier¹, Laurent Bessières⁴, Laurent Terray⁴ ¹IGE - MEOM, Grenoble, France, ²Ocean Next, Grenoble, France, ³LEGOS, Toulouse, France, ⁴CERFACS - CECI, Toulouse, France</i>			
15:10 - 15:30	Has the Gulf Stream Slowed Down during 1993-2016?	Shenfu Dong	AOML	USA
	<i>Shenfu Dong¹, Molly Baringer¹, Gustavo Goni¹ ¹AOML, National Oceanic and Atmospheric Administration, Miami, United States</i>			
15:30 - 15:50	Revisited Sea Level Budget over 2005-2015 Indicates Large Deep Ocean Warming and Large Earth Energy Imbalance	Benoit Meyssignac	LEGOS	FR
	<i>Benoit Meyssignac¹, Alejandro Blazquez¹, Alexandre Couhert², Lionel Zawadski³, Flavien Mercier², Michael Ablain³, Anny Cazenave¹ ¹LEGOS, Toulouse, France, ²CNES, Toulouse, France, ³CLS, Toulouse, France</i>			
15:50 - 16:10	Impact of Recent ENSO Variability on Global and Regional Sea Level	Benjamin Hamlington	Old Dominion University	USA
	<i>Benjamin Hamlington¹, JT Reager², Robert Leben³ ¹Old Dominion University, Norfolk, United States, ²NASA JPL, Pasadena, USA, ³University of Colorado, Boulder, USA</i>			

16:10 - 16:40 **Coffee Break**

LAGOA DAS 7 CIDADES Land Processes and Inland Water #1: Lakes and Reservoirs

Chairs: Charon Birkett (ESSIC, University of Maryland) - Alexei Kouraev (LEGOS) - Angelica Tarpanelli (IRPI-CNR)

Title		Presenter		
14:30 - 14:50	Keynote: Aral Sea Evolution from Satellite Altimetry and other Remote Sensing Data <i>Jean-francois Cretaux¹, Muriel Berge-Nguyen¹ ¹CNES-LEGOS, Toulouse, France</i>	Jean-Francois Cretaux	CNES-LEGOS	FR
14:50 - 15:10	Contribution of 25 Years of Satellite Radar Altimetry Towards Enhancing the Great Lakes Operational Forecasting System <i>Yuanyuan Jia¹, C.K. Shum^{1,2}, Philip Chu³, Yi Chao⁴, Ehsan Forootan⁵, Pengfei Xue⁶, Ting-Yi Yang¹, Xiaobin Cai², Chungyen Kuo⁷, Jian Sun¹ ¹Division of Geodetic Science, School of Earth Sciences, The Ohio State University, Columbus, USA, ²Institute of Geodesy & Geophysics, Chinese Academy of Sciences, Wuhan, China, ³NOAA Great Lakes Environmental Research Laboratory (GLERL), Ann Arbor, USA, ⁴Remote Sensing Solutions, Monrovia, USA, ⁵School of Earth and Ocean Science, Cardiff University, Cardiff, UK, ⁶Great Lakes Research Center, Michigan Technological University, Houghton, USA, ⁷Department of Geomatics, National Cheng Kung University, Tainan, Taiwan</i>	C.K. Shum	The Ohio State University Chinese Academy of Sciences	USA
15:10 - 15:30	15-years Surface Water Storage Changes of Lakes and Reservoirs in Poyang Lake Basin Based on Multi-Spectral Imageries and Multi-Mission Radar Altimetry <i>Xiaobin Cai^{1,2}, C.K. Shum^{2,1}, Yuanyuan Jia², Tingyi Yang² ¹Institute Of Geodesy And Geophysics, Chinese Academy of Sciences, wuhan, China, ²Division of Geodetic Science, School of Earth Sciences, Ohio State University, Columbus, U.S.A</i>	C.K. Shum	The Ohio State University Chinese Academy of Sciences	CN
15:30 - 15:50	Estimating 3-D Reservoir Bathymetry from Multi-Satellite Data <i>Augusto Getirana¹, Hahn Jung¹ ¹NASA Goddard Space Flight Center, Greenbelt, United States</i>	Augusto Getirana	NASA	USA
15:50 - 16:10	Lake Storage Variation on the Endorheic Tibetan Plateau and its Attribution to Climate Change since the New Millennium <i>Fangfang Yao¹, Jida Wang¹, Kehan Yang², Chao Wang³, Blake Walter¹, Jean-François Crétau⁴ ¹Kansas State University, Manhattan, United States, ²University of Colorado Boulder, Boulder, United States, ³University of Puerto Rico, San Juan, United States, ⁴Centre National d'Études Spatiales, Toulouse, France</i>	Jida Wang	Kansas State University	USA
16:10 - 16:40	Coffee Break			

LOGO DO COGRO Cryosphere #1: Ice Sheet, Glaciers, Ice Cap

Chairs: Jérôme Bouffard (ESA) | Sara Fleury (LEGOS)

Title		Presenter		
14:30 - 14:50	Review: Understanding Drivers of Change in Antarctica's Ice Shelves from 25 years of Continuous Satellite Radar Altimetry	Matthew Siegfried	Stanford University	USA
<i>Helen Amanda Fricker¹, Susheel Adusumilli², Fernando Paolo², Laurie Padman³, Matthew Siegfried⁴ ¹Scripps Institution of Oceanography/UCSD, ²Jet Propulsion Laboratory, ³Earth & Space Research, ⁴Stanford University</i>				
14:50 - 15:10	Net Retreat of Antarctic Grounding Lines Detected by CryoSat-2 Radar Altimetry	Thomas Slater	Alfred Wegener Institute	DE
<i>Hannes Konrad¹, Andrew Shepherd², Lin Gilbert³, Anna Hogg², Malcolm McMillan², Alan Muir³, Thomas Slater² ¹Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, Germany, ²Centre for Polar Observation and Modelling, University of Leeds, Leeds, United Kingdom, ³Centre for Polar Observation and Modelling, University College London, London, United Kingdom</i>				
15:10 - 15:30	A Reconciled Estimate of Antarctic Peninsula Mass Balance	Anna Hogg	CPOM	UK
<i>Anna Hogg¹, An ew Shepherd¹, Kate Briggs², Lin Gilbert², Alan Muir², Martin Horwath⁴, Thomas Nagler³, Jan Wuite³, Malcolm McMillan¹, Noel Gourmelen⁵, Helmut Rott³ ¹CPOM, Leeds, United Kingdom, ²CPOM, London, United Kingdom, ³ENVEO, Innsbruck, Austria, ⁴Technical University of esden, esden, Germany, ⁵University of Edinburgh, Edinburgh, United Kingdom</i>				
15:30 - 15:50	Dual Frequency Radar Altimetry - Measuring Greenland Firn Properties from Space	Sebatian B. Simonsen	DTU Space	DK
<i>Sebatian B. Simonsen¹, Louise Sandberg Sørensen¹, Lars Stenseng², Rene Forsberg¹ ¹Department Of Geodynamics, Dtu Space, Technical University Of Denmark, Kgs. Lyngby, Denmark, ²Department of Geodesy, DTU Space, Technical University of Denmark, Kgs. Lyngby, Denmark</i>				

Title		Presenter		
15:50 - 16:10	Contribution of Satellite Radar Altimetry Towards Quantifying Present-Day Mass Balance Estimates for Mountain Glaciers and Ice Caps	C.K. Shum	The Ohio State University Chinese Academy of Sciences	USA CN

C.K. Shum^{1,9}, Yuanyuan Jia¹, Vibhor Agarwal¹, Jian Sun¹, Kung Shang¹, Junyi Guo¹, Yuchan Yi¹, Santiago de La Pena¹, Ian Howat², Chungyen Kuo⁷, Hyongki Lee⁸, Zhiyue Sun⁸, Qiang Shen⁹, Guoqing Zhang³, Alexander Braun⁴, Graham Cogley⁵, Xiaoli Ding⁶, Xiaoli Su¹⁰ | ¹School of Earth Sciences, The Ohio State University, Columbus, United States, ²Byrd Polar & Climate Research Center, Ohio State University, Columbus, United States, ³Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing, China, ⁴Department of Geological Sciences & Geological Engineering, Queen's University, Kingston, Canada, ⁵Department of Geography, Trent University, Peterborough, Canada, ⁶Department of Land Survey & Geo-Informatics, Hong Kong Polytechnic University, Kowloon, Hong Kong, ⁷Department of Geomatics, National Cheng Kung University, Tainan, Taiwan, ⁸Department of Civil & Environmental Engineering, University of Houston, Houston, United States, ⁹Institute of Geodesy & Geophysics, Chinese Academy of Sciences, Wuhan, China, ¹⁰Huazhong University of Science & Technology, Wuhan, China

16:10 - 16:40 **Coffee Break**

16:40 - 18:20 | Parallel Sessions

AUDITORIUM Open Ocean #2: Tides, Internal Tides, Internal Waves | Chairs: Florent Lyard (LEGOS) - Richard Ray (NASA)

Title		Presenter		
16:40 - 17:00	Review: Progress and Challenges of the Tide Correction for Altimetry over Last 25 Years	Florent Lyard	LEGOS-CNRS	FR
17:00 - 17:20	Keynote: Internal Tides: the View from Satellite Altimetry	Richard Ray	NASA	USA

Florent Lyard¹, Loren Carrère², Mathilde Cancet³, Jean-Michel Lemoine⁴, Christian Bizouard⁵, Pascal Gegout⁶ | ¹LEGOS-CNRS, Toulouse, France, ²CLS, Toulouse, France, ³Noveltis, Toulouse, France, ⁴GET, Toulouse, France, ⁵IERS/Observatoire de Paris, Paris, France, ⁶GET, Toulouse

Richard Ray¹, Edward Zaron², Gary Egbert³ | ¹NASA Goddard Space Flight Center, Greenbelt, United States, ²Portland State University, Portland, United States, ³Oregon State University, Corvallis, United States

Title		Presenter		
17:20 - 17:40	Review: A Review of Global Internal Tide and Wave Modeling	Brian K. Arbic	University of Michigan	USA
<p><i>Brian K. Arbic¹, Matthew H. Alford², Joseph K. Ansong^{1,3}, Maarten C. Buijsman⁴, J. Thomas Farrar⁵, Conrad A. Luecke¹, Dimitris Menemenlis⁶, Arin D. Nelson¹, Hans E. Ngodock⁷, James G. Richman⁸, Anna C. Savage^{1,2}, Jay F. Shriver², Innocent Souopgui⁴, Patrick G. Timko^{3,9}, Alan W. Wallcraft⁸, Luis Zamudio⁸, Zhongxiang Zhao¹⁰ ¹University of Michigan, United States, ²UC San Diego, United States, ³University of Ghana, Ghana, ⁴University of Southern Mississippi, United States, ⁵Woods Hole Oceanographic Institution, United States, ⁶NASA JPL, United States, ⁷NRL Stennis Space Center, United States, ⁸Florida State University, United States, ⁹Welsh Local Centre, United Kingdom, ¹⁰Applied Physics Laboratory, United States</i></p>				
17:40 - 18:00	Review: A Review of New Internal-Tides Models and Validation Results	Loren Carrere	CLS	FR
<p><i>Loren Carrere¹, Florent Lyard², Romain Baghi¹, Nicolas Picot³, Brian Arbic⁴, Brian Dushaw⁵, Gary Egbert⁶, Svetlana Erofeeva⁶, Richard Ray⁷, Clément Ubelmann¹, Edward Zaron⁸, Zhongxiang Zhao⁹, Maarten Buijsman¹⁰, James Richman¹¹, Jay Schriver¹² ¹CLS, Ramonville-saint-agne, France, ²LEGOS-CNRS, Toulouse, France, ³CNES, Toulouse, France, ⁴University of Michigan, United States, ⁵NERSC, Norway, ⁶Oregon State University, United States ⁷NASA Goddard, Greenbelt, United States, ⁸Portland State University, United States, ⁹University of Washington, Seattle, United States, ¹⁰U-Southern Mississippi, United States, ¹¹Florida State University, United States, ¹²Naval Research Laboratory, United States</i></p>				
18:20 - 19:30	Icebreaker			

LAGOA DAS 7 CIDADES Land Processes and Inland Water #2: Methods and Rivers

Chairs: Charon Birkett (ESSIC, University of Maryland) - Jean-François Crétaux (LEGOS) - Augusto Getirana (NASA-GSFC)

	Title	Presenter		
16:40 - 17:00	Benefits of the Open Loop Tracking Command (OLTC) : Extending Conventional Nadir Altimetry to Inland Water Monitoring <i>Sophie Le Gac¹, François Boy¹, Nicolas Picot¹ ¹CNES, Toulouse, France</i>	Sophie Le Gac	CNES	FR
17:00 - 17:20	Implications of Specular Echoes for Monitoring of Inland Water Bodies <i>Ron Abileah¹, Stefano Vignudelli², Andrea Scozzari³ ¹jOmegak, San Carlos, United States, ²Consiglio Nazionale delle Ricerche (CNR-IBF), Pisa, Italy, ³Consiglio Nazionale delle Ricerche (CNR-ISTI), Pisa, Italy</i>	Ron Abileah	jOmegak	USA
17:20 - 17:40	Improvements Brought by Updated Water Masks onto Altimetric Measurements over Rivers <i>Pierre Fabry¹, Moein Zohary¹, Nicolas Bercher¹, Marco Restano², Américo Ambrozio³, Jérôme Benvéniste⁴ ¹Along-Track S.A.S., Plougonvelin, France, ²SERCO, Frascati, Italy, ³DEIMOS, Italy, ⁴ESA-ESRIN, Frascati, Italy</i>	Pierre Fabry	Along-Track	USA
17:40 - 18:00	Multi-Mission Based River Levels <i>Karina Nielsen¹, Elena Zakharova², Ole Baltazar Andersen¹, Lars Stenseng¹, Per Knudsen¹ ¹DTU Space, Kgs. Lyngby, Denmark, ²LEGOS, Toulouse, France</i>	Karina Nielsen	DTU Space	DK
18:00 - 18:20	Evaluating Multiple-Mission Satellite Altimetry Towards Establishing a Long-term Climate Record of Poorly-Gauged Rivers in Indonesian Borneo <i>Yohanes Budi Sulistioadi^{1,4}, Ting-yi Yang², Yuanyuan Jia², Dedy Cahyadi³, C.K. Shum² ¹Center of Geo-spatial Information Infrastructure Development (CGIID/PPIIG), Mulawarman University, Samarinda, Indonesia, ²Division of Geodetic Science, School of Earth Sciences, The Ohio State University, Columbus, United States of America, ³Faculty of Computer Science and Information Technology, Mulawarman University, Samarinda, Indonesia, ⁴Faculty of Forestry, Mulawarman University, Samarinda, Indonesia</i>	Yohanes Budi Sulistioadi	Mulawarman University	IDN

18:20 - 19:30 **Icebreaker**

LOGOA DO COGRO Cryosphere #2: Sea Ice and Polar Oceanography

Chairs: Jérôme Bouffard (ESA) | Sara Fleury (LEGOS)

	Title	Presenter		
16:40 - 17:00	Review: 15 Year Climate Data Record of Arctic Sea Ice Thickness from Two Generations of Satellite Radar Altimeters	Stefan Hendricks	Alfred-Wegener-Institut	DE
	<i>Stefan Hendricks¹, Stephan Paul¹, Robert Ricker¹, Eero Rinne² ¹Alfred-Wegener-Institut, Helmholtz Zentrum für Polar Und Meeresforschung, Bremerhaven, Germany, ²Finnish Meteorological Institute, Helsinki, Finland</i>			
17:00 - 17:20	Arctic Sea Ice Floe Size and Thickness Distributions from Multi-decadal Satellite Radar Altimeter Measurements	Rachel Tillig	CPOM - University Of Leeds	UK
	<i>Rachel Tilling¹, Andy Ridout², An ew Shepherd¹ ¹CPOM - University Of Leeds, Leeds, United Kingdom, ²CPOM - University College London, London, United Kingdom</i>			
17:20 - 17:40	Arctic Icebergs Climatology 1992-Present from Altimeter Data	Jean Tournadre	Ifremer	FR
	<i>Jean Tournadre¹, Rozenn Gourves-Cousin¹ ¹Ifremer, Plouzané, France</i>			
17:40 - 18:00	Sea level and Ocean Circulation in the Ice-Covered Polar Oceans: Variability, Change and Implications for Climate	Thomas Armitage	JPL	USA
	<i>Thomas Armitage¹, Ron Kwok¹, Sheldon Bacon², Andrew Thompson³, Alek Petty⁴, Glenn Cunningham¹, Andy Ridout⁵ ¹JPL, Pasadena, United States, ²National Oceanography Center, Southampton, United Kingdom, ³California Institute of Technology, Pasadena, United States, ⁴NASA Goddard Space Flight Center, Greenbelt, United States, ⁵Centre for Polar Observation and Modelling, UK</i>			
18:00 - 18:20	Exploring the Synergy of Sea Surface Height, Ocean Bottom Pressure, and Sea Surface Salinity to Study Arctic Ocean Freshwater Changes	Severine Fournier	JPL	USA
	<i>Severine Fournier¹, Tony Lee¹, Xiaochun Wang², Ron Kwok¹ ¹JPL, Pasadena, United States, ²University of California at Los Angeles, Los Angeles, United States</i>			
18:20 - 19:30	Icebreaker			

8:30 - 8:50 | Parallel Sessions

AUDITORIUM Open Ocean #3: Mesoscale–Smaller-Scale Currents | Chairs: Rosemary Morrow (LEGOS) - Bo Qiu (University of Hawaii)

	Title	Presenter		
8:30 - 8:50	Review: How Our Understanding of Ocean Mesoscale Eddies Has Evolved over 25 Years <i>Rosemary Morrow¹, Lee-Lueng Fu², J. Thomas Farrar³, Hyodae Seo³, Pierre-Yves Le Traon⁴ ¹LEGOS-OMP, Toulouse, France, ²JPL-NASA, Pasadena, United States, ³Woods Hole Oceanographic Institute, Woods Hole, United States, ⁴Mercator-Ocean, Ramonville-St-Agne, France</i>	Rosemary Morrow	LEGOS-OMP	FR
8:50 - 9:10	Review: A Review of 30 Years of Advances in Rossby Wave Theory Prompted by Satellite Altimetry <i>Remi Tailleux¹ ¹University of Reading, Reading, United Kingdom</i>	Remi Tailleux	University of Reading	UK
9:10 - 9:30	Review: Overview of Fine-scale Multiplatform Experiments in the Southwest Mediterranean Sea: Lessons Learnt in the Last Five Years <i>Ananda Pascual¹, Simón Ruiz², Antonio Sánchez-Román¹, Laura Gómez-Navarro^{1,2}, Bàrbara Barceló-Llull¹, Lara Díaz-Barroso¹, Pierre Chabert¹, Eugenio Cutolo³, Mara Amelia Freilich⁴, Emma Heslop³, Benjamin Casas¹, Marc Torner³, Baptiste Mourre³, Eva Alou³, Yuri Cotroneo⁷, Giuseppe Aulicino, Evan Mason¹, Amala Mahadevan⁴, Joaquin Tintore^{1,3}, Francesco D'Ovidio⁵, Ronan Fablet⁶, John Allen³ ¹IMEDEA(CSIC-UIB), Esporles, Spain, ²IGE, Grenoble, France, ³SOCIB, Palma, Spain, ⁴WHOI, Woods Hole, United States, ⁵LOCEAN, Paris, France, ⁶IMT Atlantique, Brest, France, ⁷Università degli Studi di Napoli "Parthenope", Napoli, Italy</i>	Ananda Pascual	IMEDEA (CSIC-UIB)	ES
9:30 - 9:50	Decadal Mesoscale Eddy Modulations in the Western North Pacific Subtropical Gyre <i>Bo Qiu¹, Shuiming Chen¹ ¹University Of Hawaii At Manoa, Honolulu, United States</i>	Bo Qiu	University Of Hawaii	USA
9:50 - 10:10	Characterizing the Transition From Balanced to Unbalanced Motions in the Southern California Current System <i>Teresa Chereskin¹, Sarah Gille², Cesar Rocha¹, Dimitris Menemenlis² ¹Scripps Institution of Oceanography, La Jolla, United States, ²NASA Jet Propulsion Laboratory, Pasadena, United States</i>	Teresa Chereskin	Scripps Institution of Oceanography	USA
10:10 - 10:40	Coffee Break			

LAGOA DAS 7 CIDADES Land Processes and Inland Water #3: Rivers (cont'd), Wetlands and Soil Moisture

Chairs: Jean-François Crétaux (LEGOS) - Alexei Kouraev (LEGOS) - Karina Nielsen (DTU Space)

Title		Presenter		
8:30 - 8:50	The Yukon River in Alaska and the Great Ruaha River in Tanzania: Assessing River and Wetland Dynamics to Aid Ground-Based Monitoring Networks and Ecological Restoration Projects within Complex and Diverse River Basins.	Charon Birkett	University of Maryland	USA
<i>Charon Birkett¹, David Bjerklie², Eric Wolanski³, Mr. Emilian Kihwele⁴ ¹University Of Maryland, College Park, United States, ²USGS Water Resources Division, East Hartford, USA, ³TropWATER/CMES James Cook University, Townsville, Australia, ⁴TANAPA, Serengeti National Park, Tanzania</i>				
8:50 - 9:10	Channel Storage Change: a New Remote Sensed Surface Water Measurement	Steve Coss	Ohio State University	USA
<i>Steve Coss¹, Michael Durand¹, Yuchan Yi¹, Qi Guo¹, C.K. Shum¹, George Allen², Xiao Yang³, Tamlin Pavelsky³ ¹Ohio State University, Columbus, United States, ²NASA Jet Propulsion Laboratories, Pasadena, United States, ³University of North Carolina, Chapel Hill, United States</i>				
9:10 - 9:30	Potential of the Radar Altimetry for Estimation of the River Input to the Arctic Ocean	Elena Zakharova	Institute of Water Problems	RU
<i>Elena Zakharova¹, Karina Nielsen², Inna Krylenko², Alexei Kouraev³ ¹Institute of Water Problems, Moscow, Russia, ²DTU SPACE, Lyngby, Denmark, ³LEGOS, Toulouse, France</i>				
9:30 - 9:50	Multi-Mission Satellite Remote Sensing for River Discharge Estimation: Recent Advances and Future Directions	Angelica Tarpanelli	IRPI-CNR	IT
<i>Angelica Tarpanelli¹, Luca Brocca¹, Stefania Camici¹, Silvia Barbetta¹, Christian Massari¹, Paolo Filippucci¹, Tommaso Moramarco¹ ¹IRPI-CNR, Perugia, Italy</i>				
9:50 - 10:10	Soil Moisture from Satellite Radar Altimetry - from ERS-2 to Sentinel-3	Philippa Berry	Roch Remote Sensing	UK
<i>Philippa Berry¹, Jerome Benveniste² ¹Roch Remote Sensing, Roch, Haverfordwest, United Kingdom, ²ESA-ESRIN, Frascati, Italy</i>				
10:10 - 10:40	Coffee Break			

LOGOA DO COGRO Altimetric Contributions to Gravity Field, Marine Geodesy, Bathymetry Modeling

Chairs: Sean Bruinsma (CNES) - Marie-Hélène Rio (CLS)

Title		Presenter		
8:30 - 8:50	Keynote: Marine Gravity Field Mapping from Altimetry – Advancement with 2nd Generation Altimeters	Ole Baltazar Andersen	DTU Space	DK
<i>Ole Baltazar Andersen¹, Per Knudsen¹, David Sandwell², Walter Smith³, David McAdoo³, Karen Marks³ ¹DTU Space, Kongens Lyngby, Denmark, ²Scripps Institution of Oceanography, San Diego, United States, ³NOAA, Washington, United States</i>				
8:50 - 9:10	The Coastal Mean Dynamic Topography in Norway Observed by CryoSat-2 and GOCE	Vegard Ophaug	NMBU	NO
<i>Vegard Ophaug¹, Martina Idzanovic¹, Ole Baltazar Andersen² ¹Faculty of Science and Technology (RealTek), Norwegian University of Life Sciences (NMBU), Ås, Norway, ²DTU Space, Technical University of Denmark, Lyngby, Denmark</i>				
9:10 - 9:20	Opportunities and Challenges of Satellite Altimeter Gravity over Lakes	Kirsten Fletcher	Getech	UK
<i>Chris Green^{1,2}, Kirsten Fletcher¹, Sam Cheyney^{1,3}, Simon Campbell¹ ¹Getech, Leeds, United Kingdom, ²School of Earth and Environment, University of Leeds, Leeds, United Kingdom, ³School of Environmental Sciences, University of Hull, Hull, United Kingdom</i>				

LOGOA DO COGRO Precise Orbit Determination

Chairs: Alexandre Couhert (CNES) - Michiel Otten (ESA)

Title		Presenter		
9:20 - 9:40	Future Challenges for POD	Space Agency Groups (CNES, NASA and ESA)		
9:40 - 9:42	REAPER Re-Scoped: Updated Orbit Solutions for the Full ERS-1 and ERS-2 Mission Periods	Pieter Visser	Delft University of Technology	NL
<i>Pieter Visser¹, Michiel Otten² ¹Delft University Of Technology, Delft, The Netherlands, ²PosiTim UG, Seeheim-Jugenheim, Germany</i>				
9:42 - 9:44	Reprocessing of TOPEX/Poseidon Precise Orbits in the CNES GDR-F Standards	Clément Masson	CS SI	FR
<i>Eva Jalabert², Clément Masson¹, Alexandre Couhert², John Moyard², Flavien Mercier² ¹CS SI, Toulouse, France, ²CNES, Toulouse, France</i>				

9:44-9:46	First Orbit Determination Results for Sentinel-3B <i>Pierre Féménias³, Jaime Fernández², Peter Heike¹ ¹Positim UG, Seeheim-Jugenheim, Germany, ²GMV AD, Tres Cantos, Spain, ³ESA-ESRIN, Frascati, Italy</i>	Peter Heike	Positim UG	DE
9:46-9:48	Improved GNSS Phase Maps in Flight Modelling and Identification, Application on Jason-2 and Jason-3 <i>Hanane Ait Lakbir¹, F Mercier², A Couhert² ¹CS SI, Toulouse, France, ²CNES, Toulouse, France</i>	Hanane Ait Lakbir	CS SI	FR
9:48 - 9:50	Generating Precise and Homogeneous Orbits for ESA's Altimetry Missions: ERS-1, ERS-2, Envisat, Cryosat-2, and Sentinel-3A <i>Michiel Otten¹, C Flohrer¹, T Springer¹, W Enderle¹ ¹ESA-ESOC, Darmstadt, Germany</i>	Michiel Otten	ESA	DE
9:50 - 9:52	Latest Results From the Geomed2 Project: Geoid and the DOT in the Mediterranean Area <i>Sean Bruinsma¹, Riccardo Barzaghi², Geomed² Team ¹CNES, Toulouse, France, ²Politecnico di Milano, Milan, Italy</i>	Sean Bruinsma	CNES	FR
9:52 - 9:54	Jason-3 and Sentinel-3A GPS Processing Using Zero-Difference Integer Ambiguity Fixing <i>Flavien Mercier¹, Hanane Ait-Lakbir¹, Clément Masson¹, Alexandre Couhert¹ ¹CNES, Toulouse, France</i>	Flavien Mercier	CNES	FR
9:54 - 9:56	The Geomed2 Combined Geoid Model <i>Sean Bruinsma¹, George Vergos², Franck Reinquin¹, Ilias Tziavos², Riccardo Barzaghi³, Daniela Carrion³, Sylvain Bonvalot⁴, Lucia Seoane⁴, Marie-Françoise Lequentrec-Lalancette⁵, Corinne Salaun⁵, Per Knudsen⁶, Ole Andersen⁶, Marie-Helene Rio⁷ ¹CNES, Toulouse, France ²Aristotle University of Thessaloniki, Thessaloniki, Greece, ³Politecnico di Milano, Milan, Italy, ⁴GET UMR 5563, Toulouse, France, ⁵SHOM, Brest, France, ⁶DTU Space, Copenhagen, Denmark, ⁷CLS, Ramonville Saint Agne, France</i>	Sean Bruinsma	CNES	FR
9:56 - 9:58	Orbit Validation of Sentinel-3 Mission <i>Pierre Féménias³, Jaime Fernández², Heike Peter¹, Copernicus POD QWG team ¹Positim UG, Swisttal, Germany, ²GMV AD, Tres Cantos, Spain, ³ESA-ESRIN, Frascati, Italy</i>	Jaime Fernández	GMV AD	ES
9:58 - 10:00	Precise Orbit Determination of the Sentinel Satellites with Gipsy-Oasis <i>Wim Simons¹, Pieter Visser¹, Marc Naeije¹, Copernicus POD QWG team ¹Delft University of Technology, Delft, The Netherlands</i>	Wim Simons	Delft University Of Technology	NL
10:10 - 10:40	Coffee Break			
10:40 - 12:20	25 Years Progress in Radar Altimetry & IDS Poster Session			
12:20 - 14:00	Lunch Break			

14:30 - 16:10 | Parallel Sessions

AUDITORIUM 25-Year Altimetric Record #1: Building the Climate Record: Accuracy and Precision over 25 Years of Altimetry Data

Chairs: Michael Ablain (CLS) - Frank Lemoine (NASA/GSFC) - Josh Willis (NASA/JPL)

	Title	Presenter		
14:00 - 14:20	Review: Evolution of LRM and SAR Altimeter Ocean Data Processing towards Improved Performances <i>Thomas Moreau¹, Pierre Thibaut¹, Laiba Amarouche¹, Jeremie Aublanc¹, Fanny Piras¹, Jean-christophe Poisson¹, Pierre Rieu¹, François Boy², Alejan o Bohe², Nicolas Picot², Franck Borde³, Constantin Mavrocordatos³, Alejan o Egado⁴, Walter H. F. Smith⁴ ¹CLS, Ramonville St Agne, France, ²CNES, Toulouse, France, ³ESA, Noordwijk, The The Netherlands, ⁴NOAA, College Park, United States</i>	Thomas Moreau	CLS	FR
14:20 - 14:40	oward an Overview of CryoSat Data Quality over the Ice and the Ocean <i>Jérôme Bouffard¹, Tommaso Parrinello¹, Pierre Féménias¹ ¹ESA- ESRIN, Frascati, Italy</i>	Jerome Bouffard	ESA	IT
14:40 - 15:00	DUACS Multi-Mission Sea Level Products: Continuous Improvements for the Past 20 Years <i>Yannice Faugere¹, Isabelle Pujol¹, Ubelmann Clement¹, Antoine Delepoule¹, Maxime Ballarotta¹, Guillaume Taburet¹, Gerald Dibarboure², Nicolas Picot² ¹CLS, Ramonville, France, ²CNES, Toulouse, France</i>	Yannice Faugere	CLS	FR
15:00 - 15:20	Lessons Learned From 25 years of Cross Calibration of the Altimetry Missions Over Ocean <i>Sylvie Labroue¹, Michael Ablain¹, Joel Dorandeu¹, Annabelle Ollivier¹, Sabine Philipps¹, Matthias Rayna¹, Hélène Roinard¹, Nicolas Picot² ¹CLS, Ramonville St Agne, France, ²CNES, Toulouse, France</i>	Sylvie Labroue	CLS	FR
15:20 - 15:40	In Situ Calibration and Validation of Satellite Altimetry: A Review of 25 Years of Ongoing Monitoring <i>Christopher Watson¹, Pascal Bonnefond², Bruce Haines³, Stelios Mertikas⁴ ¹University Of Tasmania, Hobart, Australia, ²Observatoire de Paris - SYRTE, Paris, France, ³Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, ⁴Technical University of Crete, Chania, Greece</i>	Christopher Watson	University Of Tasmania	AU
15:40 - 16:10	Coffee Break			

LAGOA DAS 7 CIDADES Synergy Between Altimetry, Other Data and Models in Support of Operational Oceanography #1

Chairs: Joël Dorandeu (CLS) - Clara Lázaro (University of Porto) - Gregory Smith (Environment and Climate Change Canada)

Title		Presenter		
14:00 - 14:20	Improved Global Surface Currents from the Merging of Altimetry and Sea Surface Temperature Data	Marie-Helene Rio	CLS	FR
<i>Marie-Helene Rio¹, Rosalia Santoleri², Daniele Ciani², Gerald Dibarboure³, Nicolas Picot³, Craig Donlon⁴ ¹CLS, Ramonville Saint Agne, France, ²ISAC-CNR, Rome, Italy, ³CNES, Toulouse, France, ⁴ESTEC, Noordwijk, The Netherlands</i>				
14:20 - 14:40	Implementation of a Balance Operator in a Multi-Scale Data Assimilation System for Operational Forecasting	Joseph D'Addezio	University of Southern Mississippi	USA
<i>Joseph D'Addezio¹, Innocent Souopgui², Max Yaremchuk³, Gregg Jacobs³, Scott Smith³, Robert Helber³, Clark Rowley³ ¹University of Southern Mississippi, Hattiesburg, United States, ²University of New Orleans, New Orleans, United States, ³Naval Research Laboratory, Stennis Space Center, United States</i>				
14:40 - 15:00	Mapping Ocean Mesoscales with a Combined Doppler Scatterometer and Altimeters Constellation	Clement Ubelmann	CLS	FR
<i>Clement Ubelmann¹, Marie-Hélène Rio¹, Fabrice Arduin³, Gerald Dibarboure² ¹CLS, Ramonville, France, ²CNES, Toulouse, France, ³IFREMER, Brest, France</i>				
15:00 - 15:20	Estimating of Any Altimeter Mean Seal Level (MSL) ifts between 1993 and 2017 by Comparison with Tide-Gauges Measurements	Michaël Ablain	CLS	FR
<i>Michaël Ablain¹, Rémi Jugier¹, Nicolas Picot² ¹CNES, Ramonville Saint-Agne, France, ²CNES, Toulouse, France</i>				
15:20 - 15:40	Impact of Altimetry Observations in the Real Time Ocean Monitoring Systems: GODAE OceanView Observing System Evaluation Studies	Elisabeth Remy	Mercator Ocean	FR
<i>Elisabeth Remy¹, Yosuke Fujii², T GODAE OceanView OSEval Task ¹Mercator Ocean, Ramonville Saint Agne, France, ²Meteorological Research Institute, Japan Meteorological Agency, Tsukuba, Japan</i>				
15:40 - 16:10	Coffee Break			

LOGO A DO COGRO Advances in our Understanding of Coastal Processes #1

Chairs: Luciana Fenoglio-Marc (University of Bonn) - Stefano Vignudelli (CNR-IBF)

Title		Presenter		
14:00 - 14:20	From the Open Ocean to the Coast and Back With ALES: Bypassing Waveform Tail Artefacts to Observe the Coastal Sea Level Variability	Marcello Passaro	DGFI-TUM	DE
<p><i>Marcello Passaro¹, Paolo Cipollini², Graham D Quartly³, Walter H F Smith⁴, Denise Dettmering¹, Christian Schwatke¹ ¹Deutsches Geodätisches Forschungsinstitut Der Technischen Universität München (DGFI-TUM), München, Germany, ²Telespazio VEGA UK for ESA Climate Office ECSAT, Didcot, United Kingdom, ³Plymouth Marine Laboratory, Plymouth, United Kingdom, ⁴National Oceanic and Atmospheric Administration, Silver Spring, United States</i></p>				
14:20 - 14:40	Sentinel-3 SAR Altimetry over Coastal and Open Ocean: Assessment of Improved Retrieval Methods from the ESA SCOOP Project	David Cotton	Satellite Oceanographic Consultants	UK
<p><i>David Cotton¹, Thomas Moreau², Matthias Raynal², Eduard Makhoul³, Mathilde Cancet⁴, Luciana Fenoglio-Marc⁵, Marc Naeije⁶, M Joana Fernandes⁷, Clara Lazarou⁸, An ew Shaw⁹, Paolo Cipollini¹⁰, Marco Restano⁹, Américo Ambrósio¹⁰, Jérôme Benveniste¹¹ ¹Satellite Oceanographic Consultants, Stockport, United Kingdom, ²CLS, Ramonville Saint-Agne, France, ³isardSAT, Guildford, UK, ⁴Noveltis, Labège, France, ⁵University of Bonn, Bonn, Germany, ⁶Delft University of Technology, Delft, The The Netherlands, ⁷University of Porto, Porto, Portugal, ⁸SKYMAT, Southampton, UK, ⁹SERCO-ESA, Frascati, Italy, ¹⁰DEIMOS-ESA, Frascati, Italy, ¹¹ESA-ESRIN, Frascati, Italy, ¹²Telespazio VEGA-ECSAT, Harwell, UK</i></p>				
14:40 - 15:00	SAMOSA++: A New Coastal SAR Altimetry Retracker and Its Application in German Bight and West Baltic Sea	Salvatore Dinardo	He Space	DE
<p><i>Salvatore Dinardo¹, Luciana Fenoglio², Christopher Buchhaupt³, Remko Scharroo⁴, M. Joana Fernandes⁵, Jerome Benveniste⁶, Matthias Becker³ ¹He Space, Franckfurt, Germany, ²TU Bonn-Institute for Geodesy and Geoinformation , Bonn, Germany, ³TU Darmstadt-Institute for Geodesy , Darmstadt, Germany, ⁴EUMETSAT, Darmstadt, Germany, ⁵University of Porto, Faculty of Science, Porto, Portugal, ⁶ESA-ESRIN, Frascati, Italy</i></p>				
15:00 - 15:20	Validation of Improved Significant Wave Heights from the Brown-Peaky Rretracker around East Coast of Australia	Fukai Peng	The University of Newcastle	AU
<p><i>Fukai Peng¹, Xiaoli Deng¹ ¹The University Of Newcastle, Australia, Jesmond, Australia</i></p>				
15:20 - 15:40	Synergy between In-situ and Altimetry Data to Observe and Study the Fine-Scale Dynamics in the Ligurian Sea (NW Mediterranean Sea)	Alice Carret	LEGOS-OMP	FR
<p><i>Alice Carret¹, Florence Birol¹, Claude Estournel² ¹LEGOS-OMP, Toulouse, France, ²LA-OMP, Toulouse, France</i></p>				
15:40 - 16:10	Coffee Break			

16:10 - 18:20 | Parallel Sessions

AUDITORIUM 25-Year Altimetric Record #2: Global Mean Sea Level as a Key Climate Indicator

Chairs: Michael Ablain (CLS) - Frank Lemoine (NASA/GSFC) - Josh Willis (NASA/JPL)

	Title	Presenter		
16:10 - 16:30	Keynote: Improvements in Accurately Measuring Sea Level Change from Space and Expectations for the Future: an ESA Climate Change Initiative <i>Michaël Ablain¹, Anny Cazenave², Benoît Meyssignac², Jean-François Legeais¹, Jérôme Benveniste³ ¹CLS, Ramonville Saint-Agne, France, ²LEGOS, Toulouse, France, ³ESA- ESRIN, Frascati, Italy</i>	Michaël Ablain	CLS	FR
16:30 - 16:50	Sea Level Rise as Measured by 11 Satellite Radar Altimeters <i>Remko Scharroo¹, Eric Leuliette², Amanda Plagge^{2,3} ¹EUMETSAT, Darmstadt, Germany, ²NOAA Lab. for Satellite Altimetry, College Park, USA, ³GST Inc., Greenbelt, USA</i>	Remko Scharroo	EUMETSAT	DE
16:50 - 17:10	A Review of the Global Sea Level Record Construction with 25 Years of Reference Missions <i>Benoit Legresy¹, Christopher Watson², John Church³ ¹CSIRO Climate Science Centre, Hobart, Australia, ²University of Tasmania, Hobart, Australia, ³University of New South Wales, Sydney, Australia</i>	Benoit Legresy	CSIRO	AU
17:10 - 17:30	Acceleration and Long Term Rise in Global Sea Level: A TOPEX Perspective <i>Josh Willis¹, Philip Callahan¹, Shailen Desai¹, Nicolas Picot², Helene Roinard³, Jean-Damien Desjonqueres¹, Matthieu Talpe¹, Thierry Guinle², Glenn Shirliffe¹ ¹NASA Jet Propulsion Laboratory, Los Angeles, United States, ²Centre Nationale des Etudes Spatial, Toulouse, France, ³Collecte Localisation Satellites, Ramonville, France</i>	Josh Willis	JPL	USA
17:30 - 17:50	Searching for Acceleration in Regional Sea Level Measurements <i>Benjamin Hamlington¹, Robert Nerem², John Fasullo³, Brian Beckley⁴ ¹Old Dominion University, Norfolk, United States, ²University of Colorado, Boulder, United States, ³NCAR, Boulder, USA, ⁴NASA GSFC, Greenbelt, United States</i>	Benjamin Hamlington	Old Dominion University	USA

LAGOA DAS 7 CIDADES Synergy Between Altimetry, Other Data and Models in Support of Operational Oceanography #2

Chairs: Joël Dorandeu (CLS) - Clara Lázaro (University of Porto) - Gregory Smith (Environment and Climate Change Canada)

	Title	Presenter		
16:10 - 16:30	Combination of AVISO/DUACS and Argo Data Sets to Follow the Evolution of Long Lived Eddies and their 3D Structure from 2000 to 2015 in the Mediterranean Sea.	Alex Stegner	CNRS, Ecole Polytechnique	FR
	<i>Alex Stegner¹, Briac LeVu¹, Cori Pegliasco², Alexis Chaigneau², Artemis Ioannou¹, Franck Dumas³, Yannice Faugere⁴, Xavier Carton⁵ ¹LMD, CNRS, Ecole Polytechnique, Palaiseau, France, ²LEGOS, CNRS, Toulouse, France, ³SHOM, Brest, France, ⁴CLS, Toulouse, France, ⁵LOPS, UBO, IUEM, Brest, France</i>			
16:30 - 16:50	Influence of North Atlantic Teleconnection Patterns on Sea Level Anomaly of the North Atlantic Ocean and Seas around Europe	Clara Lázaro	University Of Porto, Faculty Of Sciences	PT
	<i>Clara Lázaro^{1,2}, Nieves Lorenzo³, Joana Fernandes^{1,2}, Luisa Bastos^{1,2}, Isabel Iglesias² ¹Universidade do Porto, Faculdade de Ciências, Porto, Portugal, ²Centro Interdisciplinar de Investigação Marinha e Ambiental (CIIMAR), Universidade do Porto, Matosinhos, PORTUGAL, ³Environmental Physics Laboratory, Facultad de Ciencias, Universidade de Vigo, Ourense, Spain</i>			
16:50 - 17:10	Summary of Results from CASSIS Project: Southwestern Atlantic Currents From In-Situ and Satellite Altimetry	Martin Saraceno	University Of Buenos Aires CIMA/CONICET-UBA UMI-IFAEICI/CNRS-CONICET-UBA	AR
	<i>Martin Saraceno^{1,2,3}, Guillermina Paniagua^{1,2,3}, Loreley Lago^{2,3,4}, Camila Artana⁶, Ramiro Ferrari^{1,2,3}, Alberto Piola^{2,3,5}, Christine Provost⁶, Raul Guerrero⁴ ¹University of Buenos Aires, Ciudad Autonoma de Buenos Aires, Argentina, ²CIMA/CONICET-UBA, Buenos Aires, Argentina, ³UMI-IFAEICI/CNRS-CONICET-UBA, Buenos Aires, Argentina, ⁴INIDEP, Mar del Plata, Argentina, ⁵Servicio de Hidrografía Naval, Buenos Aires, Argentina, ⁶LOCEAN/UMR 7159, Paris, France</i>			
17:10 - 17:30	Transport Efficiency of an Agulhas Ring from Combined Satellite Altimetry and Argo iles	Francesco Nencioli	Plymouth Marine Laboratory	UK
	<i>Francesco Nencioli¹, Giorgio Dall'Olmo¹, Graham Quartly¹ ¹Plymouth Marine Laboratory, Plymouth, United Kingdom</i>			
17:30 - 17:50	Radar Altimeters for Enhanced Polar Ocean Observations	Michel Tsamados	University College London	UK
	<i>Tiago Dotto², Michel Tsamados¹, Harry Heortan¹, Andrew Ridout¹, Isobel Lawrence², Sheldon Bacon², Alberto Naveiro-Garabato³ ¹University College London, London, United Kingdom, ²National Oceanography Centre Southampton, Southampton, UK, ³University of Southampton, Southampton, UK, ⁴NASA JPL, United States</i>			

LOGOA DO COGRO Advances in our Understanding of Coastal Processes #2

Chairs: Mathilde Cancet (NOVELTIS) - Marcello Passaro (TUM)

Title		Presenter		
16:10 - 16:30	Coastal Sea Level Trends	Luciana Fenoglio	University of Bonn	DE
<i>Luciana Fenoglio¹, Salvatore Dinardo², Bern Uebbing¹, Joanna Staneva⁶, Remko Scharroo², Joana Fernandes⁵, Jerome Benveniste³, Christopher Buchhaupt⁴, Matthias Becker⁴, Jürgen Kusche¹ ¹University Of Bonn, Bonn, Germany, ²EUMETSAT, Darmstadt, Germany, ³ESA/ESRIN, Frascati, Germany, ⁴Technical University Darmstadt, Darmstadt, Germany, ⁵University of Porto, Porto, Portugal, ⁶Institute of Coastal Research, Geesthacht, Germany</i>				
16:30 - 16:50	Under-Estimated Wave Contribution to Coastal Sea Level Change and Rise	Angelique Melet	Mercator Ocean	FR
<i>Angelique Melet¹, Benoit Meyssignac², Rafael Almar², Gonéri Le Cozannet³ ¹Mercator Ocean, Ramonville Saint Agne, France, ²LEGOS, Université de Toulouse, CNES, CNRS, IRD, UPS, Toulouse, France, ³BRGM / French Geological Survey, Orléans, France</i>				
16:50 - 17:10	Seamless Geoids across Coastal Zones: Comparison of Satellite and Airborne Gravity across the Seven Continents – and an Azores Heritage Case	Rene Forsberg	DTU Space	DK
<i>Rene Forsberg¹, Arne Olesen¹, Daniel Barnes², Sarah Ingalls², Clifton Minter², Manny Presicci² ¹DTU Space, Lyngby, Denmark, ²National Geospatial-Intelligence Agency, Arnold, USA</i>				
17:10 - 17:30	The Impact of Satellite Altimeter Observations on Estimates of Cross-Shelf Fluxes in the Mid-Atlantic Bight	Andrew Moore	University of California Santa Cruz	USA
<i>Andrew Moore¹, John Wilkin², Julia Levin², Hernan Arango² ¹University Of California Santa Cruz, Santa Cruz, United States, ²Rutgers University, New Brunswick, United States</i>				
17:30 - 17:50	Can Ocean Temperature Changes Around the Greenland Ice Sheet Be Inferred With Altimetry	Ian Fenty	JPL	USA
<i>Ian Fenty¹, Robert Nerem² ¹NASA Jet Propulsion Laboratory, Pasadena, United States, ²Cooperative Institute for Research in Environmental Sciences/U. of Colorado, Boulder, Boulder, USA</i>				

8:30 - 10:10 | Parallel Sessions

AUDITORIUM 25-Year Altimetric Record #3: Ongoing Scientific and Technical Challenges

Chairs: Michael Ablain (CLS) - Frank Lemoine (NASA/GSFC) - Josh Willis (NASA/JPL)

Title		Presenter		
8:30 - 8:50	Review: 25 years of Sea Level Records from the Arctic Ocean Using Radar Altimetry	Rose Stine Kildegaard	Technical University of Denmark - DTU Space	DK
<i>Stine Kildegaard Rose¹, Ole Baltazar Andersen¹, Marcello Passaro², Jérôme Benveniste³ ¹Technical University of Denmark - DTU Space, Kgs. Lyngby, Denmark, ²Deutsches Geodätisches Forschungsinstitut der Technischen Universität München, Munich, Germany, ³ESA-ESRIN, Frascati, Italy</i>				
8:50 - 9:10	Towards a Methodology for Estimating Extreme Return Levels and Its Climate Variability of Coastal Sea Level from Satellite Altimetry	Hector Lobeto	Environmental Hydraulics Institute, Universidad de Cantabria	ES
<i>Hector Lobeto¹, Melisa Menendez¹ ¹Environmental Hydraulics Institute, Universidad de Cantabria, Santander, Spain</i>				
9:10 - 9:30	Understanding the Relation Between Sea Level and Bottom Pressure Variability: Recent Progress and Future Challenges	Rui Ponte	Atmospheric and Environmental Research	USA
<i>Rui Ponte¹, Christopher Piecuch² ¹Atmospheric and Environmental Research, Inc., Lexington, United States, ²Woods Hole Oceanographic Institution, Woods Hole, United States</i>				
9:30 - 9:50	25 years of Wet Tropospheric Correction: Long Term Stability Assessment Using Double Difference Method	Marie-Laure Frery	CLS	FR
<i>Marie-laure Frery¹, Bruno Picard¹, Mathilde Siméon¹, Christophe Goldstein², Pierre Féménias³, Remkoo Scharroo⁴ ¹CLS, Ramonville Saint-Agne, France, ²Centre National d'Etudes Spatiales, Toulouse, France, ³European Space Agency, Frascati, Italy, ⁴EUMETSAT, Darmstadt, Germany</i>				
9:50 - 10:10	Sea State Bias: 25 Years on	Christine Gommenginger	National Oceanography Centre	UK
<i>Christine Gommenginger¹, Méric Srokosz¹, Claire Bellingham¹, Helen Snaith¹, Nelson Pires², M. Joana Fernandes², Ngan Tran³, Doug Vandemark⁴, Thomas Moreau³, Sylvie Labroue³, Remko Scharroo⁵ ¹National Oceanography Centre, Southampton, United Kingdom, ²University of Porto, Porto, Portugal, ³Collecte Localisation Satellites, Toulouse, France, ⁴University of New Hampshire, Hampshire, United States, ⁵EUMETSAT, Darmstadt, Germany</i>				

LAGOA DAS 7 CIDADES Synergy Between Altimetry, other Data and Models in Support of Operational Oceanography #3

Chairs: Joël Dorandeu (CLS), Clara Lázaro (University of Porto), Gregory Smith (Environment and Climate Change Canada)

Title		Presenter		
8:30 - 8:50	Assimilation of High-Resolution Altimetry in a 2-km Canadian East Coast Forecasting System	Gregory Smith	Meteorological Research Division, Environment And Climate Change Canada	CA
<i>Gregory Smith¹, Claire Dufau², Mounir Benkiran³, Yimin Liu⁴, Fraser Davidson⁵ ¹Meteorological Research Division, Environment and Climate Change Canada, Dorval, Canada, ²CLS, Toulouse, France, ³Mercator Océan International, Toulouse, France, ⁴Meteorological Service of Canada, Environment and Climate Change Canada, Dorval, Canada, ⁵Fisheries and Oceans Canada, St. John's, Canada</i>				
8:50 - 9:10	Toward New Validation Concept for High-Resolution and Coastal Altimetry: Application to the Ligurian Sea	Marco Meloni	Serco	IT
<i>Marco Meloni¹, Jerome Bouffard³, Andrea Doglioli², Anne Petrenko², Guillaume Valladeau⁴ ¹Serco, Frascati, Italy, ²MIO (Mediterranean Institute of Oceanography), Marseille, France, ³Rhea c/o ESA-ESRIN, Frascati, Italy, ⁴CLS, Toulouse, France</i>				
9:10 - 9:30	A New Synergetic Approach for the Determination of the Sea-Surface Currents in the Mediterranean Sea	Daniele Ciani	National Research Council of Italy	IT
<i>Daniele Ciani¹, Marie-Hélène Rio², Rosalia Santoleri¹ ¹National Research Council Of Italy, Rome, Italy, ²Collecte Localisation Satellites, Toulouse, France</i>				
9:30 - 9:50	Continuous Transition of Kinetic Energy Spectra and Fluxes between Mesoscale and Submesoscale	Sung Yong Kim	Korea Advanced Institute of Science And Technology	KR
<i>Sung Yong Kim¹ ¹Korea Advanced Institute Of Science And Technology, Daejeon, South Korea</i>				
9:50 - 10:10	The Malvinas Current System from 25 years of MERCATOR-Ocean Operational Reanalysis: Fronts, Recirculation Cells, Vertical Motions and Blocking Events	Camila Artana	Locean Sorbonne Université	FR
<i>Camila Artana¹, Jean-Michel Lellouche², Young-Hyang Park¹, Gilles Garric², Zoé Koenig¹, Nathalie Sennéchal¹, Ramiro Ferrari³, Alberto Piola⁴, Martin Saraceno⁵, Christine Provost¹ ¹Locean Sorbonne Université, Paris, France, ²MERCATOR-OCEAN, Ramonville St. Agne, France, ³CIMA/CONICET-UBA and UMI IFAECI-3351, Buenos Aires, Argentina, ⁴Departamento de Oceanografía, Servicio de Hidrografía Naval, DCAO/FCEN/UBA and UMI IFAECI-3351, CONICET, Buenos Aires, Argentina, ⁵CIMA/CONICET-UBA, DCAO/FCEN/UBA and UMI IFAECI-335, Buenos Aires, Argentina</i>				
10:10 - 10:40	Coffee Break			

LOGO DO COGRO Outlook #1: Sea Level and Ocean Circulation: Continuity and Improved Resolution

Chairs: Lee-Lueng Fu (NASA/JPL) - Clément Ubelmann (CLS)

Title		Presenter		
8:30 - 8:50	Sentinel-3A Contribution to the Continuity of Sea-Level Rise	Cristina Martin-Puig	EUMETSAT	DE
<i>Cristina Martin-Puig¹, Remko Scharroo¹, Carolina Nogueira-Loddo¹, Bruno Lucas^{1,2}, Salvatore Dinardo^{1,2} ¹EUMETSAT, Darmstadt, Germany, ²HE Space, Darmstadt, Germany</i>				
8:50 - 9:10	The Sentinel-6/Jason-CS Mission	Craig Donlon	ESA	NL
<i>Craig Donlon¹, Robert Cullen¹, Luisella Giulicchi¹, Pierrick Vuillemier¹, Remko Scharroo², ², Eric Leuliette³, Joshua K. Willis⁴, Parag V.Vaze⁴, Pascal Bonnefond⁵ ¹ESA-ESTEC, Noordwijk, The Netherlands, ²EUMETSAT, Darmstadt, Germany, ³NOAA, Silver Springs, United States, ⁴NASA, JPL, United States, ⁵Observatoire de Paris - SYRTE, Paris, France</i>				
9:10 - 9:30	Observing the Ocean Surface Topography at High Resolution by the Surface Water and Ocean Topography (SWOT) Mission	Rosemary Morrow	LEGOS	USA
<i>Lee-Lueng Fu¹, Rosemary Morrow² ¹Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, ²LEGOS, Toulouse, France</i>				
9:30 - 9:50	Development of Hydrologic Science and Applications from the Surface Water and Ocean Topography (SWOT) Mission	Tamlin Pavelesky	Univ. of North Carolina	FR
<i>Tamlin Pavelesky², Jean-Francois Cretaux¹ ¹CNES-LEGOS, Toulouse, France, ²Dept of Geological Sc. Univ. of North Carolina, Chapel Hill, USA</i>				
9:50 - 10:10	On the Spatial Scale of the Future SWOT KaRIN Measurement over the Ocean	Lee-Lueng Fu	JPL	USA
<i>Jinbo Wang¹, Lee-Lueng Fu¹, Hector Torres Gutierrez¹, Dimitris Menemenlis¹, Shuiming Chen², Bo Qiu² ¹Jet Propulsion Laboratory/Caltech, Pasadena, United States, ²University of Hawaii, Honolulu, United States</i>				
10:10 - 10:40	Coffee Break			

10:40 - 12:20 | Parallel Sessions

AUDITORIUM Advances in Our Understanding of Wave Observations and Their Applications

Chairs: Saleh Abdalla (ECMWF) - Fabrice Ardhuin (LOPS) - Céline Tison (CNES)

	Title	Presenter		
10:40 - 11:00	Keynote: From Azores to Azores, 100 Years of Wave Observations for Forecasting: A Living History and Challenges Ahead <i>Fabrice Ardhuin¹, Alvaro Semedo² ¹LOPS, Plouzané, France, ²IHE-Delft, Delft, The The Netherlands</i>	Fabrice Ardhuin	LOPS	FR
11:00 - 11:15	Incorporation of the Satellite Altimetry to the Wave Analysis, Forecast, and Verification at NWS <i>Stylianios Flampouris¹, Jacob R. Carley², Deanna Spindler³ ¹IMSG at EMC/NCEP/NWS/NOAA, College Park, United States, ²EMC/NCEP/NWS/NOAA, College Park, United States</i>	Stylianios Flampouris	IMSG at EMC/NCEP/NWS/NOAA	USA
11:15 - 11:30	Detection of Ocean Whitecapping and its Variability Using Jason Radiometer and Radar Datasets <i>Doug Vandemark¹, Hui Feng¹, Bertand Chapron², Yves Quilfen² ¹University Of New Hampshire, Durham, United States, ²IFREMER, Plouzane, France</i>	Doug Vandemark	University of New Hampshire	USA
11:30 - 11:45	Radar Altimeter Wind and Wave Data - Delay Doppler versus Conventional <i>Saleh Abdalla¹ ¹ECMWF, Reading, United Kingdom</i>	Saleh Abdalla	ECMWF	UK
11:45 - 12:05	REVIEW: Toward a More and More Accurate Operational Wave Forecasting System: Thanks to Altimetry <i>Lotfi Aouf¹, Alice Dalphiné¹, Danièle Hauser² ¹Meteo-France, Toulouse, France, ²LATMOS/CNRS, Paris, France</i>	Lotfi Aouf	Meteo-France	FR
12:05 - 12:20	Significant Wave Height in the Subpolar Seas of the Arctic: Monitoring Change over Two Decades with Satellite Radar Altimetry <i>John M Kuhn², Kyle Duncan¹, Sinead L Farrell¹ ¹University of Maryland / ESSIC, College Park, United States, ²NOAA Laboratory for Satellite Altimetry, College Park, United States</i>	Sinead Louise Farrell	University of Maryland	USA

LAGOA DAS 7 CIDADES Outreach, Education and Altimetric Data Services**Chairs: Américo Ambrózio (ESA) - Jessica Hausman (NASA/JPL) - Vinca Rosmorduc (CLS) - Margaret Srinivasan (NASA/JPL)**

Title		Presenter		
10:40 - 11:00	ARGONAUTICA, an Educational Project Using JASON Data <i>Danielle De Staerke¹ ¹Cnes, Toulouse, France</i>	Danielle De Staerke	CNES	FR
11:00 - 11:20	25 Years of Education and Public Outreach for Ocean Radar Altimetry at NASA/Jet Propulsion Laboratory <i>Annie Richardson¹, Margaret Srinivasan¹ ¹NASA-Jet Propulsion Laboratory, Pasadena, United States</i>	Annie Richardson	JPL	USA
11:20 - 11:40	EUMETSAT Training in Ocean Remote Sensing <i>Vinca Rosmorduc¹, Christine Traeger Chatterjee³, Hayley Evers-King², Ben Loveday² ¹CLS, Ramonville Stagne, France, ²Plymouth Marine Laboratory, Plymouth, United Kingdom, ³EUMETSAT, Darmstadt, Germany</i>	Vinca Rosmorduc	CLS	FR
11:40 - 12:00	The Evolution of Data Accessibility at PO.DAAC: Seasat to SWOT <i>Jessica Hausman¹, Christopher Finch¹, David Moroni¹, Michael Gangl¹ ¹JPL PO.DAAC, Pasadena, United States</i>	Jessica Hausman	JPL	USA
12:00 - 12:20	Twenty Five Years of User Services for Altimetry Satellite Data: Aviso Experience and Lessons Learned <i>Laurent Soudarin¹, Vinca Rosmorduc¹, Thierry Guinle² ¹CLS, Ramonville Saint-agne, France, ²CNES, Toulouse, France</i>	Laurent Soudarin	CLS	FR

LOGOA DO CONGRU Outlook #2: Sea State, Polar Oceans and New Techniques | Chairs: Robert Cullen (ESA) - Mark Drinkwater (ESA)

Title		Presenter		
10:40 - 11:00	CFOSAT mission, Towards the launch <i>Cédric Tourain¹, Céline Tison¹, Raquel Rodriguez Suquet¹, Patrick Castillan¹, Flavien Guillon¹ ¹Cnes, Toulouse, France</i>	Cédric Tourain	CNES	FR
11:00 - 11:20	Development of a Potential Polar Ice and Snow Topography Mission <i>Robert Cullen¹, Michael Kern¹, Gerhard Ressler², Ignacio Navas Traver², Rolv Midthassel¹, Michael Ludwig¹, Antonio Gabriele¹, Arnaud Lecuyot¹, Tania Casal¹, Tommaso Parrinello², Bruno Berruti¹ ¹ESA-ESTEC, Noordwijk, The Netherlands, ²ESA-ESRIN, Frascati, Italy</i>	Robert Cullen	EA	NL

LOGOA DO COGRO Outlook #2: Sea State, Polar Oceans and New Techniques | Chairs: Robert Cullen (ESA) - Mark Drinkwater (ESA)

Title		Presenter		
11:20 - 11:40	The SKIM Mission for ESA Earth Explorer 9: a Pathfinder for Doppler Oceanography from Space <i>Fabrice Arduin¹, The SKIM Team¹ ¹LOPS, Plouzané, France</i>	Fabrice Arduin	LOPS	FR
11:40 - 12:00	A New Altimeter Concept for the Estimation of the Ocean Surface Directional Slopes <i>Jean-Claude Lalaurie¹, Laiba Amarouche², Emmanuel Fall² ¹CNES, Toulouse, France, ²CLS, Toulouse, France</i>	Jean-Claude Lalaurie	CNES	FR
11:40 - 12:00	Radiometer for Coastal Altimetry <i>Rolv Midthassel¹, Bruno Picard², Massimo Labriola³, Silvio Varchetta⁴ ¹ESA-ESTEC, Noordwijk, The Netherlands, ²CLS, Toulouse, France, ³Airbus Defence and Space, Madrid, Spain, ⁴Thales Alenia Space, Rome, Italy</i>	Rolv Midthassel	CNES	NL

12:30 - 14:00 **Lunch**

14:00 - 15:40 Plenary Closing Session Keynotes		Chairs: Jérôme Benveniste (ESA) - Pascal Bonnefond (Observatoire de Paris-SYRTE)		
14:00 - 14:00	Keynotes by the winners of the 2018 Argonautica contest <i>Danielle De Staerke¹, Pascal Bonnefond² ¹CNES, Toulouse, France, ²Observatoire de Paris-SYRTE, Paris, France</i>	Danielle De Staerke Pascal Bonnefond	CNES Observatoire de Paris-SYRTE	FR
14:00 - 14:10	Argonautica: Ocean, climate and pollution <i>Delegate Students¹ ¹Lycée International de Valbonne, Valbonne, France</i>	Delegate Students	Lycée International de Valbonne	FR
14:10 - 14:20	Argonautica: Nāïades of the Garonne River <i>Delegate Students¹ ¹Collège Elise Deroche, Pian sur Garonne, France</i>	Delegate Students	Collège Elise Deroche	FR

14:00 - 15:40 Plenary Closing Session Keynotes		Chairs: Jérôme Benveniste (ESA) - Pascal Bonnefond (Observatoire de Paris-SYRTE)		
14:40 - 15:00	SARAL/AltiKa: The Emblematic Ka-Band Altimetric Mission	Jacques Verron	IGE/CNRS	FR
<p><i>Jacques A Verron¹, Pascal Bonnefond², Lotfi Aouf³, Florence Biro⁴, Suchandra A. Bhomwick⁵, Stéphane Calmant⁴, JF Crétaux⁴, Gérald Dibarbouré⁶, AK Dubey⁵, Yannice Faugère⁷, Sara Fleury⁴, PK Gupta⁵, Raj Kumar⁵, Rosemary Morrow⁴, Elisabeth Rémy⁸, Frédérique Rémy⁴, WHF Smith⁹, Jean Tounadre¹⁰, KN Babu⁵, Mathilde Cancet¹¹, Aditya Chaudhary⁵, Frédéric Frappart⁴, BJ Haines¹², Olivier Laurain¹³, Annabelle Olivier⁷, JC Poisson⁷, Rashmi Sharma⁵, Pierre Thibaut⁷, C Watson¹⁴ ¹IGE/CNRS, Grenoble, France, ²SYRTE, Paris, France, ³Météo-France, Toulouse, France, ⁴LEGOS, Toulouse, France, ⁵SAC/ISRO, Ahmedabad, India, ⁶CNES, Toulouse, France, ⁷CLS, Toulouse, France, ⁸Mercator-Océan, Toulouse, France, ⁹NOAA, College Park, USA, ¹⁰IFREMER, Brest, France, ¹¹Noveltis, Toulouse, France, ¹²JPL, Pasadena, France, ¹³GeoAzur, Sophia Antipolis, France, ¹⁴University of Tasmania, Hobart, Australia</i></p>				
15:00 - 15:20	The Evolution and Status of Wide-Swath Altimetry	Ernesto Rodriguez	JPL	USA
<p><i>Ernesto Rodriguez¹, Daniel Esteban-Fernandez¹, Eva Peral¹, Curtis Chen¹, Jan Willem De Blesser¹, Brent Williams¹</i> ¹Jet Propulsion Laboratory, California Institute Of Technology, Pasadena, United States</p>				
15:20 - 15:40	Achievements and Progress in Thales Alenia Space - Radar Altimeters Product Line	Laurent Phalippou	Thales Alenia Space	FR
<p><i>Laurent Phalippou¹, Eric Caubet¹, Jacques Richard¹, Albert Cerro¹, Laurent Rey¹, Sophie Coutin-Faye², Alain Mallet², Céline Tison², Pierluigi Silvestrin³, Erik De Witte³, Robert Cullen³ ¹Thales Alenia Space, Toulouse, France, ²CNES, Toulouse, France, ³ESA, Noordwijk, The Netherlands</i></p>				
15:20 - 15:40	Benefits of New Altimetry Techniques over Non-Ocean Surfaces: A Synthesis of CLS/CNES Recent Studies	Pierre Thibaut	CLS	FR
<p><i>Pierre Thibaut¹, Thomas Moreau¹, Jérémie Aublanc¹, Fanny Piras¹, Nicolas Longepe¹, François Boy², Amandine Guillot², Sophie Le Gac², Nicolas Picot²</i> ¹CLS, Toulouse, France, ²CNES, Toulouse, France</p>				
15:40 - 16:10	Coffee Break			

16:10	Closing Session Round Tables	
	Moderators: Barbara Ryan, ex-Secretariat Director of GEO, and Jacques Verron, IGE/U. Grenoble	
16:10 - 17:10	Round Table 1: Future Observational Requirements	
	Lee-Lueng Fu (JPL)	
	Benoit Meyssignac (LEGOS)	
	Joël Dorandeu (CLS)	
	David Cotton (SAToc)	
	Jean-François Crétaux (LEGOS)	
	Cécile Kittel (DTU)	
	Sinead Farrell (NOAA)	
	Rene Forsberg (DTU)	
17:10 - 18:10	Round Table 2: Future Missions and Programmes	
	Mark Drinkwater (ESA)	
	Juliette Lambin (CNES)	
	Eric Lindstrom (NASA)	
	Eric Leuliette (NOAA)	
	Cristian Bank (EUMETSAT)	
	Pierre-Yves LeTraon (Mercator-Ocean)	
	Mauro Facchini (EC DG-GROW)	
	Gilles Ollier (EC DG-RTD)	
18:10 - 18:20	Closing remarks	Jérôme Benveniste
18:20 - 19:00	Freshen-up	
19:00 - 23:00	Symposium Dinner	

1. 25 Years of Progress in Radar Altimetry: a Historical Perspective

1	A Finer Understanding of the Processes Affecting Ocean Backscatter	Graham Quartly	Plymouth Marine Laboratory	UK
	<i>Graham Quartly¹ 1Plymouth Marine Laboratory, Plymouth, United Kingdom</i>			
2	Still Learning From ENVISAT 10-Year Altimetric Mission, 6 Years After Its End	Annabelle Ollivier	CLS	FR
	<i>Annabelle Ollivier¹, Stephanie Urien¹, Nicolas Picot², Pierre Féménias³, Thierry Guinle² 1CLS, Ramonville, France, ²CNES, Toulouse, France, ³ESA-ESRIN, Frascati, Italy</i>			
3	The Copernicus Space Infrastructure: Status & Future	Simon L. G. Jutz	ESA	IT
	<i>Simon L. G. Jutz¹ ¹ESA-ESRIN, Frascati, Italy</i>			
4	ESA Fundamental Climate Data Record for ALTimetry Project (FCDR4ALT)	Pierre Féménias	ESA	IT
	<i>"Pierre Féménias¹, Jérôme Bouffard¹, Mirko Albani¹, Gabriele Brizzi² 1ESA-ESRIN, Frascati, Italy, ²SERCO/ESA-ESRIN, Frascati, Italy</i>			
5	Polar Altimetry	Duncan Wingham	NERC	UK
	<i>Andrew Shepherd¹, Professor Duncan Wingham², Alan Muir², Andy Ridout², Lin Gibert², Mal McMillan¹, Racheal Tilling¹, Hannes Konrad¹, Tom Slater¹, Ines Otosaka¹, Anna Hogg¹, Noel Gourmelen³ ¹CPOM, Leeds, United Kingdom, ²NERC, Swindon, United Kingdom, ³CPOM, London, United Kingdom, ⁴University of Edinburgh, Edinburgh, United Kingdom</i>			
6	The Ocean Mean Dynamic Topography: 25 Years of Improvements	Marie-Helene Rio	CLS	FR
	<i>Marie-helene Rio¹, Sandrine Mulet¹, Gerald Dibarbourme², Nicolas Picot² ¹CLS, Ramonville Saint Agne, France, ²CNES, Toulouse, France</i>			
7	The Younger, Thinner, Faster Arctic Sea Ice Cover: Tracking Change Over Fifteen Years	Sinead Louise Farrell	University of Maryland/ ESSIC Oregon State University/ CEOAS	USA
	<i>Sinead Louise Farrell^{1, 2}, Jennifer Hutchings³, Kyle Duncan^{1, 2}, Joshua McCurry^{1, 2} ¹University of Maryland/ ESSIC, College Park, United States, ²Oregon State University/ CEOAS, Corvallis, United States, ³NOAA Laboratory for Satellite Altimetry, College Park, United States</i>			
8	Twenty-Five Years of Progress in Sea Floor Mapping by Satellite Altimetry	Walter Smith	NOAA	USA
	<i>Walter Smith, David Sandwell², Karen Marks¹, Ole Andersen³ ¹NOAA Laboratory For Satelite Altimetry, College Park, United States, ²Scripps Institution of Oceanography, La Jolla, United States, ³Danish Space Center, Copenhagen, Denmark</i>			

2. Advances in our Understanding of the Open Ocean

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|----|--|---------------------|---|-----|
| 9 | The Contribution of Barotropic Processes to the Sea Level Variability in the Southern Ocean and to the Variability of the ACC Transport Across the Kerguelen Plateau at Interannual Time Scales. | Frederic Vivier | CNRS/LOCEAN-IPSL/
Sorbonne Universités | FR |
| | <i>Frederic Vivier¹, Young-Hyang Park², Wilbert Weijer³ ¹CNRS/ LOCEAN-IPSL/Sorbonne Universités, Paris, France, ²MNHN/LOCEAN-IPSL/Sorbonne Universités, Paris, France, ³ Los Alamos National Laboratory, Los Alamos, USA</i> | | | |
| 10 | A Western Tropical Atlantic Circulation Analysis Using Statistics and Satellites | Sabine Arnault | LOCEAN | FR |
| | <i>Sabine Arnault¹, Sylvie Thiria¹ ¹LOCEAN UMR CNRS IRD UPMC MNHN, Paris, France</i> | | | |
| 11 | 25 Year Mesoscale Eddy Trajectory Atlas on AVISO | Antoine Delepouille | CLS | FR |
| | <i>Antoine Delepouille¹, Yannice Faugere¹, Dudley Chelton² ¹CLS, Ramonville-saint-agne, France, ²Oregon State University, Corvallis, United States</i> | | | |
| 12 | Assessing Gridded Hydrographic Observations Against Satellite Data to Investigate the Southern Ocean's Mixed Layer Budget at Interannual Time Scales | Frederic Vivier | CNRS/LOCEAN-IPSL/
Sorbonne Universités | FR |
| | <i>Ashray Nenu^{1,2}, Frederic Vivier², Nicolas Kolodziejczyk³, Antoine Ducoir¹ ¹LHEAA, CNRS UM6598, Ecole Centrale de Nantes, Nantes, France, ²CNRS/LOCEAN-IPSL/Sorbonne Universités, Paris, France, ³UBO, UMR-6523 LPO, CNRS/Ifremer/IRD/UBO, Plouzané, France</i> | | | |
| 13 | A Comparison of Global Nonstationary Semidiurnal Internal Tidal Sea Surface Height Variance between Altimeter Observations and A High Resolution Global General Circulation Model | Arin Nelson | University of Michigan | USA |
| | <i>"Arin Nelson¹, Brian Arbic¹, Edward Zaron², Jay Shriver³ ¹University Of Michigan, Ann Arbor, United States, ²Portland State University, Portland, United States, ³Naval Research Laboratory, Stennis, United States"</i> | | | |
| 14 | Spectral Signatures of the Tropical Pacific Dynamics from Model and Altimetry: A Focus on the Meso/Submesoscale Range | Lionel Gourdeau | LEGOS | FR |
| | <i>Michel Tchilibou¹, Lionel Gourdeau¹, Rosemary Morrow¹, Guillaume Serazin¹, Bugshin Djath², Florent Lyard¹ ¹LEGOS, Toulouse, France, ²HZG, Geesthacht, Germany</i> | | | |

15	Evolution of Sea-Level Variability from Open Ocean to Coastal Zones in the South China Sea	Dongju Peng	Earth Observatory of Singapore	SG
<i>Dongju Peng¹, Emma Hill^{1,2}, Aron Meltzner^{1,2}, Adam Switzer^{1,2} ¹Earth Observatory Of Singapore, Nanyang Technological University, Singapore, Singapore, ²Asian School of Environment, Nanyang Technological University, Singapore, Singapore</i>				
16	Patterns and Variability in Sea Surface Height: Linkages to Low Frequency Variability of North Atlantic Circulation	LuAnne Thompson	University of Washington	USA
<i>LuAnne Thompson¹, Robert Wills¹, Kyle Armour¹, David Battisti², Dennis Hartmann¹ ¹University Of Washington, Seattle, United States</i>				
17	Altimetric Analyses of Oceanographic Pathways during El Niño Events: Connections Between the Equator and West Coasts of North and South America	Ted Strub	Oregon State University	USA
<i>Ted Strub¹, Corinne James¹, Craig Risien¹, Ricardo Matano¹, Vincent Combes¹ ¹Oregon State University, Corvallis, United States</i>				
18	Extracting Periodic Signals of the Sea Level Variations and Their Relation To Climate Indices Around Australia	Xiaoli Deng	University of Newcastle	AU
<i>Armin Agha Karimi², Xiaoli Deng¹ ¹University Of Newcastle, Callaghan, Australia</i>				
19	Assessment of Annual Sea Level Budget Since 2005	Hindumathi K Palanisamy	LEGOS	FR
<i>Hindumathi K Palanisamy¹, Anny Cazenave¹, Karina vonSchuckmann², William Llovel¹ ¹LEGOS, Toulouse, France, ²Mercator Ocean, Toulouse, France</i>				
20	Numerical Modelling of Non-Tidal Ocean Dynamics for the Reduction of Spatio-Temporal Aliasing in Global Grids of Sea-Level Anomalies From Radar Altimetry	Henryk Dobslaw	GFZ	DE
<i>Henryk Dobslaw¹, Saskia Esselborn¹ ¹Deutsches GeoForschungsZentrum (GFZ), Potsdam, Germany</i>				
21	Complementing Satellite Altimeter Measurements with AIS Data to more Precisely Monitor the Aghulas Current	Clément Le Goff	E-odyn	FR
<i>Clément Le Goff¹, Bertrand Chapron², Tournadre Jean², Guichoux Yann¹ ¹E-odyn, Plouzane, France, ²Ifremer LOPS, Plouzane, France</i>				

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22	Satellite Altimeter Combined Measurements and Local Persistent Small-Scale Ocean-Atmosphere Signatures	Yves Quilfen	Laboratoire d'Océanographie Physique et Spatiale	RU
	<i>Yves Quilfen¹, Bertrand Chapron¹, Fabrice Ardhuin¹, Maria Yurovskaya² ¹Laboratoire d'Océanographie Physique et Spatiale, Plouzané, France, ²Marine Hydrophysical Institute RAS, Sebastopol, Russia</i>			
23	Global Wavenumber Spectra from SARAL/Altika and Sentinel-3 Observations	Oscar Vergara	LEGOS IRD/CNES/CNRS/ University of Toulouse	FR
	<i>Oscar Vergara¹, Rosemary Morrow¹, Isabelle Pujol², Gerlad Dibarboure³ ¹LEGOS IRD/CNES/CNRS/University of Toulouse, Toulouse, France, ²CLS Space Oceanography, Toulouse, France, ³CNES, Toulouse, France</i>			
24	Ocean Meso Scale in the Copernicus Marine Environment Monitoring Service Global Ocean Eddy-Resolving Physical Analysis, Forecasting and Reanalysis	Yann Drillet	Mercator Ocean	FR
	<i>Yann Drillet¹, Jean Michel Lellouche², Romain Bourdalle Badie¹ ¹Mercator Ocean, Ramonville St Agne, France</i>			
25	ACC Circulation and its Variability in the Udintsev Fracture Zone From Altimetry and in Situ Observations	Young-Hyang Park	LOCEAN, Sorbonne Université	FR
	<i>Young-Hyang Park¹, Christine Provost¹, Isabelle Durand¹, Jae-Hak Lee², Sang-Hoon Lee³, Isabelle Pujol⁴, Jean-Michel Lellouche⁵, Gilles Garric⁵ ¹LOCEAN, Sorbonne Université, Paris, France, ²KIOST, Pusan, Korea, ³KOPRI, Incheon, Korea, ⁴CLS, Toulouse, France, ⁵MERCATOR-OCEAN, Ramonville St. Agne, France</i>			
26	High Resolution Tidal Modelling at Regional Scales	Mathilde Cancet	NOVELTIS	FR
	<i>Mathilde Cancet¹, Florent Lyard², Florence Toulblanc¹ ¹NOVELTIS, Labège, France, ²LEGOS, Toulouse, France</i>			
27	Surface Film Thickness From Ku/C Band Backscatter Relation	Jean Tournadre	IFREMER	FR
	<i>Jean Tournadre¹, Doug Vandemark², Feng Hui², Bertrand Chapron¹ ¹IFREMER, Plouzané, France, ²University New-Hampshire, Durham, USA</i>			
28	Sea Level and Ocean Heat Content Variations of the Antarctic Continental Shelf	Ichiro Fukumori	JPL	USA
	<i>Ichiro Fukumori¹, Ou Wang¹, Ian Fenty¹ ¹JPL, Pasadena, United States</i>			
29	Interannual Variability of Mesoscale Eddy Kinetic Energy in the Indian and Pacific Oceans	Andrew Delman	JPL	USA
	<i>Andrew Delman¹, Tong Lee², Bo Qiu² ¹JPL, Pasadena, United States, ²University of Hawaii at Mānoa, Honolulu, United States</i>			
30	Diagnosing the Drivers of Regional Decadal Sea Level Change With ECCO	Philip Thompson	University of Hawaii	USA
	<i>Philip Thompson¹, Chris Piecuch², Rui Ponte³, Mark Merrifield⁴ ¹University Of Hawaii, Honolulu, United States, ²Woods Hole Oceanographic Institution, Woods Hole, United States, ³Atmospheric and Environmental Research, Inc., Lexington, United States, ⁴Scripps Institution of Oceanography, UC San Diego, San Diego, United States</i>			

31	How Does Resolution and Data Assimilation Affect the Predictability of Internal Tides in a Global Ocean Circulation Model?	Maarten Buijsman	University Of Southern Mississippi	USA
	<i>Maarten Buijsman¹, Jay Shriver², Gordon Stephenson¹, Chan-Hoo Jeon¹, Brian Arbic³, James Richman⁴ ¹University Of Southern Mississippi, Stennis Space Center, United States, ²Naval Research Laboratory, Stennis Space Center, United States, ³University of Michigan, Ann Arbor, United States, ⁴Florida State University, Tallahassee, United States</i>			
32	25 years of Monitoring the Antarctic Circumpolar Current at Drake Passage	Zoé Koenig	LOCEAN/Sorbonne Universite/CNRS/UPMC	FR
	<i>Zoé Koenig¹, Camila Artana¹, Ramiro Ferrari², Nathalie Sennéchaël¹, Young-Hyang Park¹, Gilles Garric³, Christine Provost¹ ¹LOCEAN Sorbonne Universite/CNRS/UPMC, Paris, France, ²CIMA-CONICET/UBA, Buenos Aires, Argentina, ³Mercator Ocean, Ramonville Saint Agne, France</i>			
33	25 Years of Malvinas Current Volume Transport at its Northernmost Extension: Variability and Drivers	Camila Artana	LOCEAN Sorbonne Universite	FR
	<i>Camila Artana¹, Ramiro Ferrari², Zoé Koenig¹, Nathalie Sennéchaël¹, Martin Saraceno³, Alberto Piola⁴, Christine Provost¹ ¹LOCEAN Sorbonne Universite, Paris, France, ²CIMA/CONICET-UBA and UMI-IFAECI-3351, Buenos Aires, Argentina, ³CIMA/CONICET-UBA, DCAO/FCEN/UBA and UMI IFAECI-3351, Argentina, ⁴Departamento de Oceanografía, Servicio de Hidrografía Naval, DCAO/FCEN/UBA and UMI-IFAECI-3351, CONICET, Argentina</i>			
34	A Regional Analysis of the West Tropical Atlantic Ocean Variability	Fabrice Hernandez	IRD/LEGOS/Mercator Océan	FR
	<i>Fabrice Hernandez¹, Minto Dimoune^{2,3}, Julia Araujo², Moacyr Araujo^{2,4} ¹IRD/LEGOS/Mercator Océan, Ramonville St Agne, France, ²Laboratório de Oceanografia Física Estuarina e Costeira (LOFEC), Department of Oceanography – DOCEAN, Federal University of Pernambuco, Recife, Brazil, ³International Chair in Mathematical Physics and Applications (ICMPA-Unesco Chair), UAC, Cotonou, Benin, ⁴Brazilian Research Network on Global Climate Change – Rede CLIMA, São José dos Campos, Brazil</i>			
35	Near-Real Time and a 25-Year Reanalysis of Global Ocean Currents at the Surface and 15m Depth From the Synergetic Use of Altimetry, GOCE, Wind and In-Situ Data	Marie-Helene Rio	CLS	FR
	<i>Marie-Helene Rio¹, Helene Etienne¹, Claire Dufau¹, Craig Donlon² ¹CLS, Ramonville Saint Agne, France, ²ESA-ESTEC, Noordwijk, The Netherlands</i>			
36	On the Relative Information Content of Surface Data versus Interior Data in Constraining the Large-Scale Ocean Circulation and Its Variability	Remi Tailleux	University of Reading	UK
	<i>Remi Tailleux¹, Keith Haines¹, Shaun Lee¹ ¹University Of Reading, Reading, United Kingdom</i>			
37	Sea Level in the Mediterranean and Black Seas: the Regional Imprints of Large-Scale Atmospheric and Oceanic Dynamics	Denis Volkov	University of Miami	USA
	<i>Denis Volkov^{1,2}, Felix Landerer³ ¹University Of Miami-CIMAS, Miami, United States, ²NOAA Atlantic Oceanographic and Meteorological Laboratory, Miami, United States, ³JPL, Pasadena, United States</i>			

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38	High-Wavenumber Variability in the Eastern Tropical Pacific from ADCP and Altimetry	Saulo Soares	University of California San Diego	USA
	<i>Saulo Soares¹, Sarah Gille¹, Teresa Chereskin¹, Cesar Rocha¹ ¹University Of California San Diego, La Jolla, United States</i>			
39	Quantifying Atlantic Water Transport to the Nordic Seas by Combined Use of Gravimetry and Altimetry	Roshin R. Raj	Nansen Center	NO
	<i>Roshin R. Raj¹, Jan Even Ø. Nilsen¹, Johnny A. Johannessen¹, Tore Furevik², Ole B. Andersen³, Laurent Bertino¹ ¹Nansen Center, Bergen, Norway, ²Bjerknes Center for Climate Research, Bergen, Norway, ³Danish Technical University, Copenhagen, Denmark</i>			
40	Advances in Studies of Upper Ocean Mesoscale Processes and Dynamics from Satellite Sensor Synergy: The GlobCurrent Findings	Johnny A. Johannessen	Nansen Center	NO
	<i>Johnny A. Johannessen¹, Bertrand Chapron², Fabrice Collard³, Marie-Helene Rio⁴, Lucille Gaultier³, Graham Quartly⁵, Craig Donlon⁶ ¹Nansen Center, Bergen, Norway, ²Ifremer, Brest, France, ³OceanDataLab, Brest, France, ⁴CLS, Toulouse, France, ⁵PML, Plymouth, UK, ⁶ESA, Noorwijk, The Netherlands</i>			
41	How Can SWOT Better Reconstruct Horizontal and Vertical Velocities?	Babette Christelle Tchouang	Mercator Ocean CNES	FR
	<i>Babette Christelle Tchouang^{1,2}, Pierre-Yves Le Traou^{1,3}, Mounir Benkiran¹, Giovanni Gruggiero¹ ¹Mercator Ocean, Ramonville Saint Agne, France, ²CNES, Toulouse, France, ³IFREMER, Brest, France</i>			
42	From Past and Present Nadir Altimetry Constellations to the SWOT Era : What is the True Effective Resolution of Altimetry?	Clement Ubelmann	CLS	FR
	<i>Clement Ubelmann¹, Maxime Ballarotta¹, Yannice Faugere¹, Gerald Dibarboure² ¹CLS, Ramonville, France, ²CNES, Toulouse, France</i>			
43	Assessment of Mesoscale Resolution Capability of Sentinel 3 and SARAL Altimeters with Respect to Kilometric-Scale Ocean Simulations.	Laurent Brodeau	Ocean Next	FR
	<i>Laurent Brodeau¹, Julien Le Sommer², Jacques Verron^{1,2}, Adekunle Ajayi², Clément Ubelmann³, Gerald Dibarboure⁴ ¹Ocean Next, Grenoble, France, ²IGE/MEOM, Grenoble, France, ³CLS Space Oceanography, Toulouse, France, ⁴CNES, Toulouse, France</i>			
44	AMOC from Space: The Importance of Synergy of Satellite and In-Situ Measurements	Shenfu Dong	AOML	USA
	<i>Shenfu Dong¹, Gustavo Goni², Hosmay Lopez^{1,2}, Molly Baringer¹ ¹AOML, National Oceanic and Atmospheric Administration, Miami, United States, ²CIMAS, University of Miami, Miami, United States</i>			
45	Mesoscale Eddies in Australian-Antarctic Basin Based on Altimetry Data	Nikita Sandalyuk	Saint Petersburg State University	RU
	<i>Nikita Sandalyuk¹, Tatyana Belonenko¹ ¹Saint Petersburg State University, Saint Petersburg, Russian Federation</i>			

3. Advances in Our Understanding of Coastal Processes

46	An Improved Satellite Altimetry Data Processing Dedicated to Coastal Areas: Validation over Algerian Coast	Ali Ram	Centre of Space Techniques	DZ
	<i>Ali Rami¹, Touati Benkouider¹ ¹Centre Of Space Techniques, Oran, Algeria</i>			
47	ALES Retracking Results for Sentinel-3A PLRM and SARAL/Altika Missions	Nadim Dayoub	National Oceanography Centre	UK
	<i>Nadim Dayoub¹, Chris Banks¹, Francisco Mir Calafat¹, Christine Gommenginger¹, Helen Snaith¹, Paolo Cipolini², Andrew Shaw³ ¹National Oceanography Centre, Southampton/ Liverpool, United Kingdom, ²Telespazio VEGA UK for ESA/ECSAT, Oxfordshire, United Kingdom, ³SKYMAT Ltd, Southampton, United Kingdom</i>			
48	Satellite Altimetry and Coastal Predictions of Atmosphere, Ocean and Wind Waves	Emil Stanev	HZG	DE
	<i>Emil Stanev¹ ¹HZG, Geesthacht, Germany</i>			
49	Greenlandic Coastal Sea Ice Freeboard and Thickness From CryoSat-2 SARIn Data	Alessandro Di Bella	DTU Space JPL	DE/USA
	<i>Alessandro Di Bella^{1,2}, Ron Kwok², Thomas Armitage², Henriette Skourup¹, Rene Forsberg¹ ¹DTU Space, National Space Institute, Kgs. Lyngby, Denmark, ²JPL, Pasadena, United States</i>			
50	Assessment of Ionosphere TEC Determination From Dual-Frequency Altimetry Missions With Reference to Local and Global GNSS-TEC Models in Coastal Regions	Wojciech Jarmołowski	University of Warmia And Mazury in Olsztyn	PL
	<i>Wojciech Jarmołowski¹, Paweł Wielgosz¹, Xiaodong Ren², Anna Krypiak-Gregorczyk¹ ¹University Of Warmia And Mazury In Olsztyn, Olsztyn, Poland, ²Wuhan University, Wuhan, China</i>			
51	The Low-Frequency Variability of the Agulhas Bank Circulation	Ricardo Matano	CEOAS	USA
	<i>Ricardo Matano¹, Vincent Combes¹, Ted Strub¹, Corinne James¹ ¹CEOAS, Oregon State University, Corvallis, United States</i>			
52	Cross-Calibration of Retracked Jason-2 and Sentinel-3A SAR Sea Surface Heights Around Australia	Fukai Peng	University of Newcastle	AU
	<i>Fukai Peng¹, Xiaoli Deng¹ ¹The University of Newcastle, Australia, Newcastle, Australia</i>			

53	Developments in SAR Altimetry Over Coastal and Open Ocean: A Retrospective of Developments in SAR Altimetry Processing and the Improvements Achieved Through the SAMOSA, CP40 and SCOOP Projects	David Cotton	Satellite Oceanographic Consultants	UK
<p><i>David Cotton¹, Thomas Moreau², Matthias Raynal², Eduard Makhoul³, Mathilde Cancet⁴, Luciana Fenoglio-Marc⁵, Salvatore Dinardo⁶, Marc Naeije⁷, M Joana Fernandes⁸, Clara Lazaro⁸, Andrew Shaw⁹, Paolo Cipollini¹⁰, Christine Gommenginger¹¹, Pablo Nilo Garcia¹⁰, Francisco Martin¹², Alejandro Egado¹³, Francois Boy¹⁴, Nicolas Picot¹⁴, Ole Andersen¹⁵, Lars Stenseng¹⁵, Cristina Martin Puig¹², Philippa Berry¹⁶, Keith Raney¹⁷, Chris Ray¹⁸, Marco Restano¹⁹, Américo Ambrózio²⁰, Jérôme Benveniste²¹ ¹Satellite Oceanographic Consultants, Stockport, United Kingdom, ²CLS, Ramonville Saint-Agne, France, ³IsardSAT, Guildford, UK, ⁴Noveltis, Labège, France, ⁵University of Bonn, Bonn, Germany, ⁶TU Darmstadt, HeSpace / EUMETSAT, Darmstadt, Germany, ⁷Delft University of Technology, Delft, The Netherlands, ⁸University of Porto, Porto, Portugal, ⁹SKYMAT, Southampton, UK, ¹⁰Telespazio VEGA / ECSAT, Harwell, UK, ¹¹National Oceanography Centre, Southampton, UK, ¹²CGI / EUMETSAT, Darmstadt, Germany, ¹³NOAA, Silver Springs, USA, ¹⁴CNES, Toulouse, France, ¹⁵DTU Space, Copenhagen, Denmark, ¹⁶Roch Remote Sensing, Leicester, UK, ¹⁷2kr-LLC, Annapolis, USA, ¹⁸IsardSAT, Barcelona, Spain, ¹⁹SERCO/ESA-ESRIN, Frascati, Italy, ²⁰DEIMOS/ESA-ESRIN, Frascati, Italy, ²¹ESA-ESRIN, Frascati, Italy</i></p>				
54	Estimated of Background Concentration of Dissolved Oil-Hydrocarbons in the Baltic Sea from Illegal Discharges of Oil-Containing Waste from Ships	Sergey Lebedev	GC RAS Maykop State Technological University	RU
<p><i>Sergey Lebedev^{1,2} ¹GC RAS, Moscow, Russian Federation, ²Maykop State Technological University, Maykop, Russian Federation</i></p>				
55	Interannual Variability of the Black Sea level and Surface Temperature along the Coast of the Krasnodar Krai and the Republic of Abkhazia Based on Satellite Altimetry and Radiometry	Sergey Lebedev	GC RAS Maykop State Technological University	RU
<p><i>Sergey Lebedev^{1,2}, Andrey Kastianov³, Asida Akhsalba⁴, Pavel Kravchenko⁵ ¹GC RAS, Moscow, Russian Federation, ²Maykop State Technological University, Maykop, Russian Federation, ³P.P.Shirshov Institute of Oceanology of the Russian Academy of Sciences, Moscow, Russian Federation, ⁴Abkhazian State University, Sukhum, Abkhazia, ⁵Tver State University, Tver, Russian Federation</i></p>				
56	Processing Method of Satellite Altimetry Data for White, Barents and Kara Seas	Sergey Lebedev	GC RAS Maykop State Technological University	RU
<p><i>Sergey Lebedev^{1,2} ¹GC RAS, Moscow, Russian Federation, ²Maykop State Technological University, Maykop, Russian Federation</i></p>				
57	Validation of Coastal Sea Level Rates from Dedicated Coastal Altimetry Products	Andrew Shaw	SKYMAT Ltd	UK
<p><i>Andrew Shaw¹, Francisco Mir Calafat², Nadim Dayoub², Paolo Cipollini³, Jérôme Benveniste⁴ ¹SKYMAT Ltd, Southampton, United Kingdom, ²National Oceanography Centre, Southampton, United Kingdom, ³Telespazio VEGA for ESA-ECSA, Luton, United Kingdom, ⁴ESA-ESRIN, Frascati, Italy</i></p>				

58	High Resolution Coastal Wave Model for the West-Indies under Major Hurricanes of 2017 <i>Alice Dalphinét¹, Lotfi Aouf¹, Robert Osinski¹, Héloïse Michaud² ¹Meteo-France, France, ²SHOM, France</i>	Alice Dalphinét	Meteo-France	FR
59	Evaluation of the Impact of High Frequency Radar Data Assimilation on SSH Forecast <i>Jaime Hernandez Lasheras¹, Baptiste Mourre¹, Emma Reyes¹, Jano Orfila², Joaquin Tintoré² ¹SOCIB, Palma De Mallorca, Spain, ²IMEDEA, Esporles, Spain</i>	Jaime Hernandez Lasheras	SOCIB	ES
60	S3 SAR Mode for Coastal Altimetry. Dedicated Algorithms for Improving Sea Surface Height Series <i>Pablo Garcia¹, Eduard Makhoul¹, Mònica Roca¹ ¹Isardsat SL, Barcelona, Spain</i>	Pablo Garcia	Isardsat SL	ES
61	GNSS-R Altimetry for Support of Coastal Altimetry <i>Kaoru Ichikawa¹, Takuji Ebinuma², GROWTH team IRIAM, Kyushu University, Kasuga, Japan, ²College of Engineering, Chubu University, Kasugai, Japan</i>	Kaoru Ichikawa	Kyushu University	JP
62	Assimilation of Altimeter Observations into the Navy Coastal Ocean Model <i>Hans Ngodock¹, Matthew Carrier¹, Scott Smith¹ ¹The Us Naval Research Laboratory, Stennis Space Center, United States</i>	Hans Ngodock	The Us Naval Research Laboratory	USA
63	Contribution of Satellite Radar Altimetry for Land Deformation Studies <i>Ting-Yi Yang¹, C.K. Shum^{1,2}, Yuanyuan Jia¹, Alexander Braun³, Yuchan Yi¹, Cheinway Hwang⁴, Chungyen Kuo⁵, Kuo-Hsin Tseng⁶, Yuande Yang⁷, Chunxi Guo⁸, Jianliang Nie⁸ ¹The Ohio State University, Columbus, United States, ²Chinese Academy of Sciences, China, ³Queen's University, Canada, ⁴National Chiao Tung University, Taiwan, ⁵National Cheng Kung University, Taiwan, ⁶National Central University, Taiwan, ⁷Wuhan University, China, ⁸Centre for Geodetic Data Processing, China</i>	Ting-Yi Yang	Ohio State University	USA
64	Validating Altimeter Estimates of Sea Level Along the Southern Coast of Australia <i>Madeleine Cahill¹, Claire Dufau², Gerald Dibarbouré³, Benoit Legresy¹ ¹CSIRO, Battery Point, Australia, ²CLS, Toulouse, France, ³CNES, Toulouse, France</i>	Madeleine Cahill	CSIRO	AU
65	Last Developments and Perspectives of the X-TRACK Regional Altimeter Products <i>Fabien Léger¹, Florence Biro¹, Fernando Niño¹, Sara Fleury¹, Marcello Passaro² ¹LEGOS/CTOH, Toulouse, France, ²DGFI-TUM, Munich, Germany</i>	Fabien Léger	LEGOS / CTOH	FR
66	Absolute Water Levels at the Estuary of the Karnaphuli River (Bay of Bengal, Bangladesh): Comparison Between Sea / River Surface Heights Gained by GNSS Survey and Satellite Altimetry in Coastal Environment <i>Marufa Ishaque¹, Daniel Moreira², Stephane Calmant², Fabien Durand², Laurent Testut^{2,3}, Yann Krien⁴, Valerie Ballu³, Fabrice Papa² ¹BSMR Maritime University, Dhaka, Bangladesh, ²LEGOS, Toulouse, France, ³LIENSs, La Rochelle, France, ⁴LARGE, University des Antilles, Guadeloupe, France</i>	Marufa Ishaque	BSMR Maritime University	BD

4. Advances in Our Understanding of Wave Observations and Their Applications

67	Wind and Wave Climate from 32-Years of Satellite Altimetry <i>Justin Stopa^{1,2}, Doug Vandemark², Fabrice Ardhuin¹, Bertrand Chapron¹ ¹LOPS, Plouzane, France, ²UNH, Durham, United States</i>	Doug Vandemark	UNH	USA
68	Wave Steepness from Satellite Altimetry for Wave Dynamics and Climate Studies <i>Sergei Badulin², Vika Grigorieva¹ ¹Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russian Federation, ²Laboratory of Nonlinear Wave Processes, Novosibirsk State University, Novosibirsk, Russian Federation</i>	Sergei Badulin	Shirshov Institute of Oceanology Novosibirsk State University	RU
69	CFOSAT : A New Satellite for Ocean/Atmosphere Interaction Research and Operational Oceanography <i>Danièle Hauser¹, Céline Tison², Alexis Mouche³, Lotfi Aouf⁴, Bertrand Chapron³, Cedric Tourain² ¹LATMOS (CNRS -UVSQ- Sorbonne-Université), Guyancourt, France, ²CNES, Toulouse, France, ³Ifremer, Brest, France, ⁴Meteo-France, , France</i>	Danièle Hauser	LATMOS	FR
70	Radar Altimeter Signatures of Internal Solitary Waves in the Ocean <i>José Da Silva¹, Adriana Santos-Ferreira¹, Meric Srokosz², Jean Tournadre³, Bertrand Chapron³ ¹University Of Porto, Porto, Portugal, ²National Oceanography Centre, Southampton, Southampton, U.K., ³IFREMER, , France</i>	José Da Silva	University Of Porto	PT
71	Advances in Using Satellite Altimetry to Enhance Monitoring and Prediction of Storm Surges <i>Guoqi Han¹ ¹Fisheries And Oceans Canada, St. John's, Canada</i>	Guoqi Han	Fisheries and Oceans Canada	CA
72	The Sea State Climate Change Initiative Project <i>The Sea State CCI Team¹ ¹LOPS, Plouzane, France</i>	The Sea State CCI Team	LOPS	FR
73	Status of the Surface Wave Investigation and Monitoring (SWIM) Instrument <i>Benjamin Carayon¹, Laurent Rey¹, Thierry Amiot², Céline Tison², Patrick Castillan² ¹Thales Alenia Space, Toulouse, France, ²CNES, Toulouse, France</i>	Benjamin Carayon	Thales Alenia Space	FR

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74	Ocean Wave Data Assimilation at ECMWF: A Review <i>Saleh Abdalla¹, Jean-Raymond Bidlot¹ 1ECMWF, Reading, United Kingdom</i>	Saleh Abdalla	ECMWF	UK
75	Impact of Vertical Sea Wave Orbital Velocities on SAR Altimetry <i>Christopher Buchhaupt¹, Luciana Fenoglio², Salvatore Dinardo³, Remko Scharroo³, Jerome Benveniste⁴, Matthias Becker⁴ ¹TU Darmstadt, Darmstadt, Germany, ²University of Bonn, Bonn, Germany, ³EUMETSAT, Darmstadt, Germany, ⁴ESA-ESRIN, Frascati, Italy, ⁵He Space-EUMETSAT, Darmstadt, Germany</i>	Christopher Buchhaupt	TU Darmstadt	DE
76	New Wave Near-Real-Time Observational Products Derived From Altimetry and SAR <i>Elodie Charles¹, Romain Husson², Nicolas Taburet¹, Alexis Mouche³ ¹CLS, Ramonville Saint-Agne, France, ²CLS, Brest, France, ³IFREMER, Brest, France</i>	Elodie Charles	CLS	FR
77	Synergy Between Satellite Observations and Model Simulations During Extreme Events <i>Joanna Staneva¹, Anne Wiese¹, Arno Behres¹, Johannes Schulz-Stellenfleth¹, Luciana Fenoglio-Marc² ¹Helmholz Zentrum Geesthacht, Geesthacht, Germany, ²University of Bonn, Bonn, Germany</i>	Joanna Staneva	HZG	DE
78	From Gravity Waves to Mesoscales: Broadband Measurements of Ocean Surface Topography Using Airborne Lidar Technology <i>Kendall Melville¹, Luc Lenain¹, Nick Statom¹ ¹Scripps Institution of Oceanography, La Jolla, United States</i>	Kendall Melville	Scripps Institution of Oceanography	USA
79	Mixing, Restratification and Heat Uptake in Tropical Cyclones Wake : Processes and Contribution of Multiplatform Satellite <i>Clément Combet¹, Yves Quilfen¹, Bertrand Chapron¹, Alexis Mouche¹ ¹LOPS-SIAM IFREMER, Brest, France</i>	Clément Combot	LOPS-SIAM IFREMER	FR
80	Characterization of the Wind Drop-Off in Coastal Eastern Boundary Upwelling System Using Surface Winds from Radar Altimetry <i>Frédéric Frappart^{1,2}, Orlando Astudillo³, Abderrahim Bentamy⁴, Boris Dewitte^{2,3,5,6}, Marc Mallet⁷, José Ruttlant^{3,5}, Marcel Ramos^{3,6}, Luis Bravo⁶, Katerina Goubanova^{3,6,8}, Serena Illig⁹ ¹GET, Toulouse, France, ²LEGOS, Toulouse, France, ³CEAZA, La Serena, Chile, ⁴IFREMER, Brest, France, ⁵Universidad de Chile, Santiago, Chile, ⁶Universidad Católica del Norte, Coquimbo, Chile, ⁷CNRM, Toulouse, France, ⁸CERFACS, Toulouse, France, ⁹University of Cape Town, Cape Town, South Africa</i>	Frédéric Frappart	GET LEGOS	FR
81	Assessment of Severe Waves with Satellite Altimetry Data and Doppler Radar Observations in the North Sea <i>Sonia Ponce De Leon Alvarez¹, Joao Bettencourt¹, Frederic Dias² ¹CENTEC-Centre for Marine Technology and Ocean Engineering, Lisbon, Portugal, ²University College Dublin, Dublin, Ireland</i>	Sonia Ponce De Leon Alvarez	CENTEC-Centre for Marine Technology and Ocean Engineering	PR

5. Altimetric Contributions to Gravity Field, Marine Geodesy, Bathymetry Modeling

82	Mean Dynamic Topography Determination Using Saral/AltiKa Altimetry Data and GOCE Gravity Model	Ali Rami	Centre of Space Techniques	DZ
	<i>Ali Rami¹, Touati Benkouider¹, Faouzi Berrichi¹ ¹Centre of Space Techniques, Oran, Algeria</i>			
83	Mean Sea Surface: A Constant Evolution Over the Last 25 Years	Philippe Schaeffer	CLS	FR
	<i>Philippe Schaeffer¹, Isabelle Pujol¹, Yannice Faugère¹, Nicolas Picot², David Sandwell³, Gerald Dibarbouré² ¹CLS, Ramonville, France, ²CNES, Toulouse, France, ³Scripps Inst. of Oceanography, La Jolla, CA, USA</i>			
84	Mean Sea Level and Mean Dynamic Topography Determination From Cryosat-2 Data Around Australia	Xiaoli Deng	University of Newcastle	AU
	<i>Armin Agha Karimi¹, Ole Baltazar Andersen², Xiaoli Deng¹ ¹University Of Newcastle, Callaghan, Australia, ²DTU Space, National Space Institute, Lyngby, Denmark</i>			
85	Indirect Mapping of Sub-Water Interfaces Derived from Satellite Altimetry: From Seafloor to River Channels	Adrien Paris	CLS LEGOS	FR
	<i>Adrien Paris^{1,2}, Pierre-André Garambois³, Stéphane Calmant², Amanda Montazem², Jérôme Monnier⁴ ¹CLS, Ramonville, France, Ramonville Saint Agne, France, ²LEGOS, Université de Toulouse, IRD, CNES, CNRS, UPS, Toulouse, France, ³ICUBE-UMR 7357, Fluid Mechanics Team, INSA, Strasbourg, France, ⁴IMT UMR5219, INSA, Toulouse, France</i>			
86	A Coastal Mean Sea Surface with Associated Errors Along the Norwegian Coast Based on New-Generation Altimetry	Vegard Ophaug	NMBU	NO
	<i>Vegard Ophaug¹, Kristian Breili^{1,2}, Ole Baltazar Andersen³ ¹Faculty of Science and Technology (RealTek), Norwegian University of Life Sciences (NMBU), As, Norway, ²Geodetic Institute, Norwegian Mapping Authority, Hønefoss, Norway, ³DTU Space, Technical University of Denmark, Lyngby, Denmark</i>			
87	Improved Arctic Ocean Bathymetry and Regional Tide Atlas – a CP40 Initiative	Ole Baltazar Andersen	DTU Space	DK
	<i>Ole Baltazar Andersen¹, Mathilde Cancet², David Cotton³, Jerome Benveniste⁴ ¹DTU Space, Kongens Lyngby, Denmark, ²Noveltis, Toulouse, France, ³Sat0c, United Kingdom, ⁴ESA-ESRIN, Frascati, Italy</i>			
88	A New DTU18 MSS Mean Sea Surface – Improvement From SAR Altimetry	Ole Baltazar Andersen	DTU Space	DK
	<i>Ole Baltazar Andersen¹, Per Knudsen¹, Lars Stenseng¹ ¹DTU Space, Kongens Lyngby, Denmark</i>			
89	High Resolution Gravity Field Modelling Using SAR Altimetry in the Northeast Atlantic Ocean	Marie-Francoise Lalancette	SHOM	FR
	<i>Ole Baltazar Andersen¹, Marie-Francoise Lalancette², Corinne Salaun², Mathilde Cancet³ ¹DTU Space, Kongens Lyngby, Denmark, ²SHOM, France, ³Noveltis, France</i>			

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90	Global and Regional Evaluation of the First Two Years of Sentinel-3A and Very First Sentinel-3B and the Impact of Mean Sea Surfaces and Ocean Tide Corrections	Ole Baltazar Andersen	DTU Space	DK
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Ole Baltazar Andersen¹, Heidi Rannda¹ | ¹DTU Space, Kongens Lyngby, Denmark

91	The Contribution of DTU17 Marine Gravity for the Arctic Bathymetry Prediction	Adil Abulaitijiang	DTU Space	DK
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Adil Abulaitijiang¹, Ole Andersen¹, David Cotton², Mathilde Cancet³, Jerome Benveniste⁴ | ¹DTU Space, Kongens Lyngby, Denmark, ²SatOc, , United Kingdom, ³Noveltis, Toulouse, France, ⁴ESA-ESRIN, Frascati, Italy

6. Precise Orbit Determination

92	REAPER Re-Scoped: Updated Orbit Solutions for the Full ERS-1 and ERS-2 Mission Periods	Pieter Visser	Delft University of Technology	NL
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Pieter Visser¹, Michiel Otten² | ¹Delft University Of Technology, Delft, The Netherlands, ²PosiTim UG, Seeheim-Jugenheim, Germany

93	Reprocessing of TOPEX/Poseidon Precise Orbits in the CNES GDR-F Standards	Clément Masson	CS SI	FR
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Clément Masson¹, Alexandre Couhert², John Moyard², Flavien Mercier², Eva Jalabert² | ¹CS SI, Toulouse, France, ²CNES, Toulouse, France

94	Improved GNSS Phase Maps in Flight Modelling and Identification, Application on Jason-2 and Jason-3	Hanane Ait Lakbir	CS SI	FR
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Hanane Ait Lakbir¹, Flavien Mercier², Alexandre Couhert² | ¹CS SI, Toulouse, France, ²CNES, Toulouse, France

95	First Orbit Determination Results for Sentinel-3B	Heike Pete	Positim UG	DE
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Heike Peter¹, Jaime Fernández², Pierre Féménias³ | ¹Positim UG, Seeheim-Jugenheim, Germany, ²GMV AD, Tres Cantos, Spain, ³ESA-ESRIN, Frascati, Italy

96	Latest Results From the Geomed2 Project: Geoid and the DOT in the Mediterranean Area	Riccardo Barzaghi	Politecnico di Milano	IT
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Riccardo Barzaghi¹, Geomed² Team | ¹Politecnico di Milano, Milan, Italy

97	The Geomed2 Combined Geoid Model	Sean Bruinsma	CNES	FR
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Sean Bruinsma¹, George Vergos², Franck Reinquin¹, Ilias Tziavos², Riccardo Barzaghi³, Daniela Carrion³, Sylvain Bonvalot⁴, Lucia Seoane⁴, Marie-Françoise Lequentrec-Lalancette⁵, Corinne Salaun⁵, Per Knudsen⁶, Ole Andersen⁶, Marie-Helene Rio⁷ | ¹CNES, Toulouse, France, ²Aristotle University of Thessaloniki, Thessaloniki, Greece, ³Politecnico di Milano, Milan, Italy, ⁴GET UMR 5563, Toulouse, France, ⁵SHOM, Brest, France, ⁶DTU Space, Copenhagen, Denmark, ⁷CLS, Ramonville Saint Agne, France

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98	Orbit Validation of Sentinel-3 Mission <i>Jaime Fernández², Heike Peter¹, Pierre Féménias³, Copernicus POD QWG team ¹Positim UG, Swisttal, Germany, ²GMV AD, Tres Cantos, Spain, ³ESA-ESRIN, Frascati, Italy</i>	Jaime Fernández	GMV AD	DE
99	Generating Precise and Homogeneous Orbits for ESA's Altimetry Missions: ERS-1, ERS-2, Envisat, Cryosat-2, and Sentinel-3A <i>Michiel Otten¹, Claudia Flohner¹, Tim Springer¹, Werner Enderle¹ ¹ESA-ESOC, Darmstadt, Germany</i>	Michiel Otten	ESA	DE
100	Jason-3 and Sentinel-3A GPS Processing Using Zero-Difference Integer Ambiguity Fixing <i>Flavien Mercier¹, Hanane Ait-Lakbir, Clément Masson, Alexandre Couhert ¹CNES, Toulouse Cedex 9, France</i>	Flavien Mercier	CNES	FR
101	Precise Orbit Determination of the Sentinel Sattelites With Gipsy-Oasis <i>Wim Simons¹, Pieter Visser¹, Marc Naeije¹, Copernicus POD QWG team² ¹Delft University of Technology, Delft, The Netherlands, ²Copernicus POD QWG team</i>	Wim Simons	Delft University of Technology	NL

7. Advances in Our Understanding of Land Processes and Inland Water Storage and Fluxes

102	Global River Monitoring From Satellite Radar Altimetry-Achievements and Challenges <i>Philippa Berry¹, Jerome Benveniste² ¹Roch Remote Sensing, Roch, Haverfordwest, United Kingdom, ²ESA-ESRIN, Largo Galileo Galilei, Frascati, Italy</i>	Philippa Berry	Roch Remote Sensing	UK
103	Constructing High-Frequency Time Series of Global Lake and Reservoir Storage Changes Using Landsat Imagery and Radar Altimetry <i>Fangfang Yao¹, Jida Wang¹, Chao Wang², Jean-François Crétaux³ ¹Kansas State University, Manhattan, United States, ²University of Puerto Rico, San Juan, United States, ³CNES, Toulouse, France</i>	Fangfang Yao	Kansas State University	USA
104	HYDROWEB/HYSOPE : A Processing Center for Lakes and Rivers Observation <i>Jean-Francois Cretaux¹, Stephane Calmant², Philippe Pacholczyk³, Lionel Zawadzki⁴, Joel Dorandeu⁴, Valery Vuglinsky⁵ ¹CNES/LEGOS, Toulouse, France, ²IRD/Legos, Toulouse, France, ³CNES, Toulouse, France, ⁴CLS, Ramonville St Agne, France, ⁵SHI, St Petersburg, Russia</i>	Jean-Francois Cretaux	CNES/LEGOS	FR
105	Long-Term Chronicles of Fluvial Characteristics and Hydraulic Variables Using Multimission Satellite Altimetry in the Congo River Basin <i>Adrien Paris¹, Stéphane Calmant², Ayan Fleischmann³, Taina Conchy⁴, Vinicius Siqueira³, Marielle Gosset⁵, Rodrigo Cauduro Dias de Paiva³, Walter Collischonn³, Joecila Santos da Silva⁴ ¹Collecte Localisation Satellite (CLS), Ramonville, France, Ramonville Saint Agne, France, ²LEGOS, Université de Toulouse, IRD, CNES, CNRS, UPS, Toulouse, France, ³IPH, UFRGS, Porto Alegre, Brazil, ⁴CESTU, UEA, Manaus, Brazil, ⁵GET, Université de Toulouse, IRD, CNES, CNRS, UPS, Toulouse, France</i>	Adrien Paris	CLS	FR

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106	Ice Cover of Eurasian Lakes from Satellite and In-Situ Observations	Alexei Kouraev	LEGOS/Université de Toulouse/CNES/CNRS/IRD/UPS Toulouse Tomsk State University	FR
<p><i>Alexei Kouraev^{1,2}, Elena Zakharova³, Frédérique Rémy¹, Mikhail Shimaraev⁴, Andrey Kostianoy⁵, Andrey Suknev⁶ ¹LEGOS/Université de Toulouse/CNES/CNRS/IRD/UPS Toulouse, France, Toulouse, France, ²Tomsk State University, Tomsk, Russia, ³Water Problems Institute, Russian Academy of Sciences, Moscow, Russia, ⁴Limnological Institute, Siberian Branch of Russian Academy of Sciences, Russia, ⁵P.P Shirshov Institute of Oceanology RAS, Moscow, Russia, ⁶Great Baikal Trail Buryatiya, Ulan-Ude, Russia</i></p>				
107	HYDROLARE–Main Tasks and Activity	Valery Vuglinsky	SHI	RU
<p><i>Valery Vuglinsky¹, Jean-Francois Cretaux² ¹SHI, St Petersburg, Russia, ²CNES/LEGOS, Toulouse, France</i></p>				
108	Challenges of Water Level Monitoring Over Narrow Rivers Using Multi-Mission Satellite Altimetry: Case Studies of Karun and Nile	Sajedah Behnia	University of Stuttgart	DE
<p><i>Sajedah Behnia¹, Nicolaas Sneeuw¹ ¹Institute of Geodesy, University Of Stuttgart, Germany</i></p>				
109	Assessment of Non-Stationary River Runoff in Boreal Catchments with Multi-Mission Altimetry	Elisabeth Woisetschläger	University of Stuttgart	DE
<p><i>Elisabeth Woisetschläger¹, Nico Sneeuw¹, Mohammad Tourian¹ ¹Institute of Geodesy, University of Stuttgart, Stuttgart, Germany</i></p>				
110	Lake and River Water Level Measurements From Radar and ICESat Laser Altimetry and Comparisons With GRACE	Claudia Cristina Carabaja	Sigma Space Corp.	FR
<p><i>Claudia Cristina Carabaja¹, Jean-Paul Boy² ¹Sigma Space Corp.@NASA/GSFC, Greenbelt, United States, ²EOST-IPGS (UMR 7516), France</i></p>				
111	Extending the Database of Hydrology Targets for DEM Onboard Altimeters	Denis Blumstein	CNES LEGOS	FR
<p><i>Denis Blumstein^{1,2}, Léa Lasseur², Sylvain Biancamaria², Stéphane Calmant², Jean-François Crétaux^{1,2}, Muriel Bergé-Nguyen^{1,2}, Fabien Blarel², Frédéric Frappart², Fabrice Papa², Fernando Niño², Sara Fleury², Elena Zakharova², Sophie Le Gac¹, Nicolas Picot¹ ¹CNES, Toulouse, France, ²LEGOS, Toulouse, France</i></p>				
112	Identification of the Rybinsk Reservoir Ice Cover and Investigation of its Interannual Variability Based on Satellite Altimetry and Radiometry	Sergey Lebedev	GC RAS Maykop State Technological University	RU
<p><i>Sergey Lebedev^{1,2}, Shamil Bogoutdinov¹, Pavel Kluev³, Stanislav Nekhoroshev¹ ¹GC RAS, Moscow, Russian Federation, ²Maykop State Technological Institute, Maykop, Russian Federation, ³Tver State University, Tver, Russian Federation</i></p>				

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113	G-REALM: Investigating the Jason-3 and Sentinel-3A Data Sets for the Next Phase of Operational Lake and Wetland Monitoring	Martina Ricko	SGT Inc NASA	USA
	<i>Martina Ricko^{1,2}, Charon Birkett³, Xu Yang¹, Brian Beckley^{1,2}, Curt Reynolds⁴, Elias Deeb⁵ ¹SGT Inc, Greenbelt, USA, ²NASA/GSFC, Greenbelt, USA, ³ESSIC, University of Maryland, College Park, USA, ⁴USDA/FAS, Washington, USA, ⁵ERDC/USACE, Hanover, USA</i>			
114	The SEOM "Sentinel-3 Hydrologic Altimetry Processor Prototype" (SHAPE) Project: Progresses & Status	Nicolas Bercher	Along-Track S.A.S	FR
	<i>Nicolas Bercher¹, Dr. Pierre Fabry¹, Dr. Albert Garcia Mondejar², Dr. Eduard Makhoul³, Dr. Joana Fernandes³, Dr. David Gustafsson⁴, Dr. Marco Restano⁵, Dr. Américo Ambrózio⁶, Dr. Jérôme Benveniste⁷ ¹Along-Track S.A.S., Plougonvelin, France, ²isardSAT UK, Surrey, United Kingdom, ³University of Porto, Porto, Portugal, ⁴SMHI, Norrköping, Sweden, ⁵Serco, Frascati, Italy, ⁶Deimos, Frascati, Italy, ⁷ESA-ESRIN, Frascati, Italy, ⁸isardSAT Spain, , Barcelona</i>			
115	Validation of 25 Years of Altimetry Data over Inland Water: from T/P to Sentinel-3A	Nicolas Bercher	Along-Track S.A.S	FR
	<i>Nicolas Bercher¹, Pierre Fabry¹ ¹Along-Track S.A.S., Plougonvelin, France</i>			
116	Selective Retracking of Bright Targets Exploiting Consecutive Waveforms: Application to LRM Altimetry Over Rivers	Nicolas Bercher	Along-Track S.A.S	FR
	<i>Nicolas Bercher¹, Pierre Fabry¹, François Boy² ¹Along-Track S.A.S, Plougonvelin, France, ²CNES, Toulouse, France</i>			
117	Monitoring Inland Water Bodies from Sentinel-3 and CryoSat-2 SAR Altimeters	Shirzad Roohi	University of Stuttgart	DE
	<i>Shirzad Roohi¹ ¹University of Stuttgart, Stuttgart, Germany</i>			
118	Influence of the Recent Climatic Events on the Surface Water Storage of the Tonle Sap	Frédéric Frappart	GET LEGOS	FR
	<i>Frédéric Frappart^{1,2}, Sylvain Biancamaria², Cassandra Normandin³, Fabien Blarel², Luc Bourrel², Aumont Mélanie^{1,2}, Azemar Pauline^{1,2}, Phuong Lan Vu¹, Thuy Le Toan⁴, Bertrand Lubac³, José Darrozes¹ ¹GET, Toulouse, France, ²LEGOS, Toulouse, France, ³EPOC, Bordeaux, France, ⁴CESBIO, Toulouse, France</i>			
119	Calibration and Validation of Inland Waters Heights from SAR, SARIN and Conventional Altimetry	Stuart Edwards	Newcastle University	UK
	<i>Stuart Edwards¹, Philip Moore², Christopher Pearson¹ ¹Newcastle University, Newcastle upon Tyne, United Kingdom</i>			
120	Satellite Altimetry for Discharge Estimation and for Monitoring Extreme Events	Stefania Camici	IRPI-CNR	IT
	<i>Stefania Camici¹, Angelica Tarpanelli¹ ¹IRPI-CNR, Perugia, Italy</i>			
121	Sentinel3 in the Context of Multisensor Synergy: New Discovery and Analysis Tools	Lucile Gaultier	OceanDataLab	FR
	<i>Lucile Gaultier¹, Fabrice Collard¹, Gilles Guitton¹, Sylvain Herlédan¹, Ziad El Khoury Hanna¹, Guillaume Le Séach¹ ¹OceanDataLab, Locmaria-Plouzané, France</i>			

122	On the Potential of Altimetry Data for the Calibration of Hydraulic Models: a Comparison of Different Products and Multi-Mission Series	Alessio Domeneghetti	University of Bologna	IT
	<i>Alessio Domeneghetti¹, Giada Molari¹, Mohammad J. Tourian², Angelica Tarpanelli³, Luca Brocca³, Tommaso Moramarco³, Attilio Castellarin¹, Nico Sneeuw², Armando Brath¹ ¹University Of Bologna, Bologna, Italy, ²Institute of Geodesy, University of Stuttgart, Stuttgart, Germany, ³IRPI-CNR, Perugia, Italy</i>			
123	Evaluating the Use of River Level Estimations Derived From Radar Altimetry Data into Hydrological Modelling of the Chari River Basin	Mauro Arcorace	CIMA DIBRIS, University of Genoa	IT
	<i>Mauro Arcorace^{1,2}, Jérôme Benveniste³, Giorgio Boni^{1,2}, Luca Dell'Oro⁴, Simone Gabellani¹, Alessandro Masoero¹, Giovanni Sabatino⁵, Olivier Sénégas⁴, Francesco Silvestro¹ ¹CIMA Research Foundation, Savona, Italy, ²DIBRIS, University of Genoa, Genova, Italy, ³ESA-ESRIN, Frascati, Italy, ⁴UNITAR-UNOSAT, Geneva, Switzerland, ⁵Progressive Systems srl c/o ESRIN, Frascati, Italy</i>			
124	Adaptation of the SAR Altimetric Ocean Retracker for Inland Waters: Methodology and Preliminary Results	Eduard Makhoul	IsardSAT	ES
	<i>Eduard Makhoul¹, Mònica Roca¹, Albert Garcia-Mondéjar², Qi Gao¹, Maria Jose Escorihuela¹ ¹IsardSAT, Barcelona, Spain, ²IsardSAT Ltd., Guildford, United Kingdom</i>			
125	Integrating Sentinel Series Data to Monitor Lake Level Variation in Tibet	Kuo-Hsin Tseng	NCU	TW
	<i>Kuo-Hsin Tseng^{1,2}, Aive Liibus³, C.K. Shum⁴, Hyongki Lee⁵, Chung-Yen Kuo⁶ ¹Center for Space and Remote Sensing Research, National Central University, Taoyuan, Taiwan, ²Institute of Hydrological and Oceanic Sciences, National Central University, Taoyuan, Taiwan, ³Department of Geomatics, Institute of Forestry and Rural Engineering, Estonian University of Life Sciences, Tartu, Estonia, ⁴Division of Geodetic Science, School of Earth Sciences, Ohio State University, Columbus, United States, ⁵Department of Civil and Environmental Engineering, University of Houston, Houston, United States, ⁶Department of Geomatics, National Cheng Kung University, Tainan, Taiwan</i>			
126	Can Sentinel Measure Water Level over Po River at 80HZ?	Angelica Tarpanelli	IRPI-CNR	IT
	<i>Angelica Tarpanelli¹, Américo Ambrósio², Marco Restano³, Jérôme Benveniste⁴ ¹IRPI-CNR, Perugia, Italy, ²DEISMOS-ESRIN, Rome, Italy, ³SERCO-ESRIN, Rome, Italy, ⁴ESA-ESRIN, Frascati, Italy</i>			
127	Lake Bracciano Water Level Variation from Sentinel-3 Measurements Processed at the GPOD SARvatore Service	Marco Restano	SERCO	IT
	<i>Marco Restano¹, Salvatore Dinardo², Américo Ambrósio³, Angelica Tarpanelli⁴, Jérôme Benveniste⁵ ¹SERCO/ESA-ESRIN, Frascati, Italy, ²He Space-EUMETSAT, Germany, ³DEIMOS/ESA-ESRIN, Frascati, Italy, ⁴CNR-IRPI, Perugia, Italy, ⁵ESA-ESRIN, Frascati, Italy</i>			

8. Advances in Our Understanding of the Cryosphere

128 25 Years of Radar Altimetry Over the Antarctic Ice Shelves: Retrieving Trends and Variability Fernando Paolo JPL USA

Fernando Paolo¹, Johan Nilsson¹, Alex Gardner¹ | ¹JPL, Pasadena, United States

129 Pysiral–An Open Source Python Sea Ice Radar Altimetry Toolbox Stefan Hendricks Alfred-Wegener-Institut DE

Stefan Hendricks¹ | ¹Alfred-Wegener-Institut, Helmholtz Zentrum für Polar Und Meeresforschung, Bremerhaven, Germany

130 Retrieving Sea Surface Topography in the Arctic Ocean from Satellite Altimetry with Ocean/ Sea-Ice Processing Continuity Pierre Prandi CLS FR

Pierre Prandi¹, Poisson Jean-Christophe¹, Pierre Thibaut¹, Yannice Faugère¹ | ¹CLS, Ramonville Saint-agne, France

131 Assessment of Sentinel-3 SAR Altimetry over Ice Sheets Malcolm McMillan University of Leeds UK

Malcolm McMillan¹, Alan Muir², Andrew Shepherd¹ | ¹University Of Leeds, Leeds, United Kingdom, ²University College London, London, United Kingdom

132 SAR Altimetry Processing Development for Ice Sheets Malcolm McMillan University of Leeds UK

Malcolm McMillan¹, Roger Escola², Monica Roca², Pierre Thibaut³, Jeremie Aublanc³, Frederique Remy⁴, Andrew Shepherd¹, Marco Restano⁵, Americo Ambrozio⁵, Jerome Benveniste⁵ | ¹University Of Leeds, Leeds, United Kingdom, ²IsardSAT Ltd, Guildford, United Kingdom, ³CLS, Ramonville Saint-Agne, France, ⁴LEGOS, Toulouse, France, ⁵ESA-ESRIN, Frascati, Italy

133 Impact of Greenland Surface Melt on CryoSat-2 Elevation Measurements Thomas Slater University of Leeds UK

Thomas Slater¹, Andrew Shepherd¹, Malcolm McMillan¹, Thomas Armitage², Amber Leeson³, Anna Hogg¹, Lin Gilbert⁴, Alan Muir⁴, Stephen Cornford⁵, Kate Briggs¹ | ¹Centre for Polar Observation and Modelling, University Of Leeds, Leeds, United Kingdom, ²JPL, California Institute of Technology, Pasadena, USA, ³Lancaster Environment Centre/Data Science Institute, Lancaster University, Lancaster, United Kingdom, ⁴Centre for Polar Observation and Modelling, University College London, London, United Kingdom, ⁵Department of Geography, Swansea University, Swansea, United Kingdom

134 A New Digital Elevation Model of Antarctica Derived from CryoSat-2 Altimetry Thomas Slater University of Leeds UK

Thomas Slater¹, Andrew Shepherd¹, Malcolm McMillan¹, Alan Muir², Lin Gilbert², Anna Hogg¹, Hannes Konrad^{1,3}, Tommaso Parrinello⁴ | ¹Centre for Polar Observation and Modelling, University Of Leeds, Leeds, United Kingdom, ²Centre for Polar Observation and Modelling, University College London, London, United Kingdom, ⁴ESA-ESRIN, Frascati, Italy

135 Techniques for Combining Multi-Mission Satellite Altimetry Time Series of Ice Sheet Elevation Change Lin Gilbert CPOM UK

Lin Gilbert¹, Alan Muir², Andrew Shepherd¹, Anna Hogg¹, Malcolm McMillan¹ | ¹CPOM, Leeds, United Kingdom

136	Observation of the Ice Cover in the Okhotsk Sea by Dual-Frequency Precipitation Radar	Vladimir Karaev	Institute of Applied Physics Ras	RU
	<i>Vladimir Karaev¹, Maria Panfilova¹, Eugeny Meshkov¹, Maria Ryabkova¹ ¹Institute of Applied Physics Ras, Nizhny Novgorod, Russian Federation</i>			
137	Inter-Comparison of AltiKa and CryoSat Over Greenland	Inès Otosaka	University of Leeds	UK
	<i>Inès Otosaka¹, Andrew Shepherd¹, Anna Hogg¹ ¹School of Earth And Environment, University of Leeds, Leeds, United Kingdom</i>			
138	Radar Altimetry to Support Ice Navigation	Eero Rinne	Finnish Meteorological Institute	FI
	<i>Eero Rinne¹, Heidi Sallila¹, Markku Similä¹, Antti Kangas¹, Stefan Hendricks² ¹Finnish Meteorological Institute, Helsinki, Finland, ²Alfred Wegener Institute, Bremerhaven, Germany</i>			
139	ERS-2, EnviSat, AltiKa: 23 Years of Repeat Radar Altimetry above the Antarctica Ice Sheet	Frédérique Rémy	CNRS	FR
	<i>Frédérique Rémy¹, Fifi Adodo¹, Anthony Mémín² ¹CNRS, Toulouse, France, ²University Nice Sophia Antipolis, Nice, France</i>			
140	Greenland CCI Surface Elevation Change Products from Cryosat-2 and SARAL/ALtiKa	Sebatian B. Simonsen	DTU Space	DK
	<i>Sebatian B. Simonsen¹, Kirill Khvorostovsky², Louise Sandberg Sørensen¹, Rene Forsberg¹ ¹Department Of Geodynamics, Dtu Space, Technical University Of Denmark, Kgs. Lyngby, Denmark, ²Satellite Oceanography Laboratory, Russian State Hydrometeorological University, Saint Petersburg, Russia</i>			
141	Satellite-Derived Sea-Ice Export and Its Impact on Arctic Ice Mass Balance	Robert Ricker	Alfred Wegener Institute	DE
	<i>Robert Ricker¹, Fanny Girard-Ardhuin², Thomas Krumpen¹, Camille Lique² ¹Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, Germany, ²University of Brest, CNRS, IRD, Ifremer, LOPS, IUEM, Brest, France</i>			
142	Radar Wave Interaction with the Antarctica Snowpack: Outcomes of the ESA SPICE Project	Jeremie Aublanc	CLS	FR
	<i>Jeremie Aublanc¹, Pierre Thibaut¹, Clément Lacrouts¹, Frédérique Rémy², Malcolm McMillan³, Jérôme Benveniste⁴ ¹CLS, Ramonville-Saint-Agne, France, ²LEGOS, Toulouse, France, ³University of Leeds, Leeds, United Kingdom, ⁴ESA, Frascati, Italy</i>			
143	Validation of Satellite Cryosphere Altimetry with Airborne Surveys – Results of CryoVEx Campaigns	Sine M. Hvidegaard	DTU Space	DK
	<i>Sine M. Hvidegaard¹, Henriette Skourup¹, René Forsberg¹, Taniâ Casa², Malcolm Davidson² ¹DTU Space, Kgs. Lyngby, Denmark, ²ESA, Noordwijk, The The Netherlands</i>			
144	Topography of A68 Iceberg from AltiKa and Cryosat Data	Jean Tournadre	Ifremer	FR
	<i>Jean Tournadre¹ ¹Ifremer, Plouzané, France</i>			

145	Quick Decisions–Choosing the Right Sea Ice Thickness Product	Heidi Sallila	Finnish Meteorological Institute	FI
	<i>Heidi Sallila¹, Joshua McCurry², Sinéad Farrell², Eero Rinne¹ ¹Finnish Meteorological Institute, Helsinki, Finland, ²ESSIC, University of Maryland, College Park, USA</i>			
146	A Synergistic Use of Sentinel-1 and CryoSat-2 SAR Data Over Sea Ice in the Cryo-SEANICE ESA Project	Pierre Fabry	Along-Track S.A.S.	FR
	<i>Pierre Fabry¹, Moein Zohary¹, Nicolas Bercher¹, Jérôme Bouffard², Pierre Femenias² ¹Along-Track S.A.S., Plougonvelin, France, ²ESA-ESRIN, Frascati, Italy</i>			
147	Looking Forward and Backward: New Techniques for Quantifying Dynamic Surface-Height Changes With Radar Altimetry in Antarctica	Matthew Siegfried	Stanford University	USA
	<i>Matthew Siegfried¹, Dustin Schroeder¹, Davide Castellett¹ ¹Stanford University, Stanford, United States</i>			
148	Toward a CryoSat-2 / Sentinel-3 Continuum of Sea-Ice Thickness and Volume Observations	Antoine Laforge	CTOH/LEGOS	FR
	<i>Antoine Laforge¹, Sara Fleury¹, Kévin Guerreiro², Florence Biro¹, Salvatore Dinardo², Giovanni Sabatino³, Jérôme Benveniste³, Jérôme Bouffard³, Pierre Féménias³ ¹CTOH/LEGOS, Toulouse, France, ²He Space-EUMETSAT, Darmstadt, Germany, ³ESA-ESRIN, Frascati, Italy</i>			
149	Consistent CryoSat-2 and Envisat Freeboard Retrieval of Arctic and Antarctic Sea Ice	Stephan Paul	Alfred Wegener Institute	DE
	<i>Stephan Paul¹, Stefan Hendricks¹, Robert Ricker¹, Stefan Kern², Eero Rinne³ ¹Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research, Bremerhaven, Germany, ²Integrated Climate Data Center, Hamburg, Germany, ³Finnish Meteorological Institute, Helsinki, Finland</i>			
150	Polar Ocean Case Study. An Example for Dedop Studio	Anna Bulczak	Isardsat	PL
	<i>Anna Bulczak¹, Waldemar Walczowski¹ ¹Isardsat, Gdansk, Poland, ²Institute of Oceanology, Poland, Sopot, Poland</i>			
151	Four Decades of Surface Elevation Change of the Antarctic Ice Sheet from Multi-Mission Satellite Altimetry	Ludwig Schröder	Technische Universität Dresden	DE
	<i>Ludwig Schröder¹, Martin Horwath¹, Reinhard Dietrich¹, Veit Helm² ¹Technische Universität Dresden, Institut Für Planetare Geodäsie, Dresden, Germany, ²Alfred Wegener Institute Helmholtz, Centre for Polar and Marine Research, Bremerhaven, Germany</i>			
152	CryoSat: ESA'S Ice Explorer Mission, 8 Years in Operations: Status, Main Achievements and Future Outlook	Tommaso Parrinello	ESA	IT
	<i>Tommaso Parrinello¹ ¹ESA-ESRIN, Frascati, Italy</i>			

153	Sea Ice Mass Reconciliation Exercise (SIMRE) for Altimetry Based Sea Ice Thickness Data Sets	Stefan Hendricks	Alfred-Wegener-Institut	DE
<p><i>Stefan Hendricks¹, Christian Haas¹, Michel Tsamados², Andy Ridout, Ron Kwok⁴, Nathan Kurtz⁵, Kévin Guerreiro⁶, Eero Rinne⁷, Anna Bulczak⁸</i> ¹Alfred-Wegener-Institut, Helmholtz Zentrum Für Polar Und Meeresforschung, Bremerhaven, Germany, ²University College London, Department of Earth Sciences, London, Great Britain, ³University College London, Centre for Polar Observation and Modelling, London, Great Britain, ⁴JPL, California Institute of Technology, Pasadena, United States, ⁵NASA, Goddard Space Flight Center, Greenbelt, United States, ⁶Laboratoire d'Etudes en Géophysique et Océanographie Spatiales, Toulouse, France, ⁷Finish Meteorological Institute, Helsinki, Finland, ⁸IsardSAT Sp. Z.o.o., Gdansk, Poland</p>				
154	Towards a Multi-Decadal Pan-Arctic Snow Depth on Sea Ice: A Novel Model-Satellite-Airborne Fusion Approach	Isobel Lawrence	University College London	UK
<p><i>Isobel Lawrence², Michel Tsamados¹, Sammie Buzzard¹, Harry Heorton¹, Andy Ridout¹, Julienne Stroeve¹ ¹University College London, London, United Kingdom</i></p>				
155	Estimating Time-Variable Basal Melt Rates of Antarctic Ice Shelves: Progress and Challenges	Susheel Adusumilli	Scripps Institution of Oceanography	USA
<p><i>Susheel Adusumilli², Helen Amanda Fricker¹, Laurie Padman² ¹Scripps Institution Of Oceanography, La Jolla, USA, ²Earth and Space Research, Corvallis, United States</i></p>				
156	Monitoring Measurement Performance Of The CryoSat SIRAL Level 2 Data Products	Julia Gaudelli	UCL	UK
<p><i>Julia Gaudelli², Steven Baker¹, Alan Muir², David Brockley¹ ¹UCL, Dorking, United Kingdom</i></p>				
157	Radar vs LiDAR: Where Are Their Reflective Surfaces in Vegetation and Ice/Snow?	Alexander Braun	Queen's University WLS	CA/FI
<p><i>Alexander Braun^{1,2}, Christian Ginzler², Yves Buehler² ¹Queen's University, Kingston, Canada, ²Swiss Federal Institute for Forest, Snow and Landscape Research, WSL, Birmensdorf, Switzerland</i></p>				
158	Results from the ESA Arctic+ Snow Project	Michel Tsamados	University College London	UK
<p><i>Michel Tsamados¹, Samantha Buzzard¹, Isobel Lawrence¹, Julienne Stroeve¹, Christian Haas^{2,3}, Steffan Hendricks, Eero Rinne⁵, Thomas Armitage⁴, Anna Bulczak⁴, Andrew Ridout¹ ¹Centre for Polar Observation and Modelling, University College London, London, United Kingdom, ²Alfred Wegener Institut, Bremerhaven, Germany, ³York University, York, Canada, ⁴NASA JPL, United States, ⁵Finnish Meteorological Institute, Helsinki, Finland, ⁶IsardSAT Poland, Gdynia, Poland</i></p>				
159	Multi-Decadal Arctic Sea Ice Roughness	Michel Tsamados	University College London	UK
<p><i>Michel Tsamados¹, Anne Nolin², Alek Petty³, Julienne Stroeve¹, Jack Landy⁴, Christian Haas⁵, Fanny Arduin⁶, Peter Muller⁷, Said Kharbouche⁷ ¹University College London, London, United Kingdom, ²Oregon State University, USA, ³NASA Goddard, USA, ⁴Bristol University, UK, ⁵AWI, Germany, ⁶IFREMER, France, ⁷MSSL, UCL, UK</i></p>				

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160	25 Year Time Series of Multiple-Satellite Ice Sheet Changes: the ESA Climate Change Initiative	Rene Forsberg	DTU Space	DK
	<i>Rene Forsberg¹, Louise Sorensen¹, Sebastian Simonsen¹, Valentina Barletta¹, Anders Kusk¹, Thomas Nagler², Markus Hetzenecker², Andy Shepherd³, Andreas Groh⁴, Anne Solgaard⁵, Marcus Engdahl⁶ ¹DTU Space, Lyngby, Denmark, ²ENVED, Innsbruck, Austria, ³University of Leeds, Leeds, UK, ⁴Technical University of Dresden, Dresden, Germany, ⁵GEUS, Copenhagen, Denmark, ⁶ESA-ESRIN, Frascati, Italy</i>			
161	Assessing Stability and Precision of Sea-Ice Thickness Retrievals from Satellite Altimetry by a Cross-over Analysis	Robert Ricker	AWI	DE
	<i>Robert Ricker¹, Stefan Hendricks¹, Stephan Paul¹ ¹AWI, Bremerhaven, Germany</i>			
162	Sensitivity Analysis of Different Processing Approaches on Ice-Volume Change Estimates of Greenland and Antarctica	Veit Helm	Alfred Wegener Institute	DE
	<i>Veit Helm¹, Angelika Humbert^{1,2} ¹Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, Germany, ²University of Bremen, Bremen, Germany</i>			
163	Snow Depth on Sea Ice for 2013-2017 Arctic Winters from CryoSat-2 and SARAL Inter-Comparison	Sara Fleury	LEGOS/CTOH	FR
	<i>Sara Fleury¹, Kévin Guerreiro¹, Antoine Laforge¹, Florence Biro¹, François Boy², Amandine Guillot², Nicolas Picot², Pierre Thibaut⁴, Jérôme Bouffart³, Pierre Féménias³, Tommaso Parinello³ ¹LEGOS/CTOH, Toulouse, France, ²CNES, Toulouse, France, ³ESA-ESRIN, Frascati, Italy, ⁴CLS, Toulouse, France</i>			
164	Changes in Antarctic Ice Sheet Surface Elevation from a Quarter-century of Combined Radar and Laser Altimetry	Johan Nilsson	NASA	USA
	<i>Johan Nilsson¹, Fernando Paolo¹, Alex Gardner¹, Sebastian Bjerregaard Simonsen² ¹JPL-NASA, California Institute of Technology, Pasadena, United States, ²DTU Space, National Space Institute, Technical University of Denmark, Kgs. Lyngby, Denmark</i>			
165	Sea Ice Freeboard from ICESat-2 Multi-Beam Altimetry	Thomas Armitage	JPL	USA
	<i>Ron Kwok¹, Thomas Armitage¹ ¹JPL, Pasadena, United States</i>			
166	Towards an Operational Snow Depth and Density Product for use in Radar Altimetry	Julienne Stroeve	University College London	UKA
	<i>Julienne Stroeve¹, Glen Liston¹, Samantha Buzzard¹, Michel Tsamados¹ ¹University College London, London, United Kingdom</i>			

9. Extending the 25-Year Altimetric Record: Challenges and Achievements

167	Use of Satellite Altimeter Data for Comparison and Calibration of Century Based Wind and Wave Climate Data Record	Berguzar Oztunali Ozbahceci	Izmir Institute of Technology	TR
<i>Berguzar Oztunali Ozbahceci¹, Ahmet Riza Turgut¹, Ahmet Bozoklu¹, Dr Saleh Abdalla² ¹Izmir Institute Of Technology, Izmir, Turkey, 2ECMWF, Reading, UK</i>				
168	Corsica: A 20-yr Multi-Mission Absolute Altimeter Calibration Site	Pascal Bonnefond	SYRTE	FR
<i>Pascal Bonnefond¹, Pierre Exertier², Olivier Laurain², Thierry Guinle³, Pierre Féménias⁴ ¹Observatoire de Paris-SYRTE, Paris, France, ²OCA/Geoazur, Sophia-Antipolis, France, ³CNES, Toulouse, France, ⁴ESA-ESRIN, Frascati, Italy</i>				
169	Updates to the Geosat 30th Anniversary Data Set	Eric Leuliette	NOAA	US
<i>Eric Leuliette¹, Walter H. F. Smith², Remko Scharroo², Frank Lemoine³, Nikita Zelensky⁴, John Lillibridge ¹NOAA, College Park, United States, ²EUMETSAT, Darmstadt, Germany, ³NASA Goddard Space Flight Center, Greenbelt, United States, ⁴SGT Inc., Greenbelt, United States</i>				
170	Saral/Altika Altimetry Data Processing for Determination of the Mean Sea Surface over the Western Mediterranean Sea	Touati Benkouider	Centre Of Space Techniques	DZ
<i>Touati Benkouider¹, Ali Ram¹ ¹Centre Of Space Techniques, Arzew, Algeria</i>				
171	Estimating Trend Uncertainties of Global Mean Sea level Evolution over the 25-Year Altimetry Era	Michaël Ablain	CLS	FR
<i>Michaël Ablain¹, Zawadzki Lione¹, Rémi Jugier¹, Benoit Meyssignac², Anny Cazenave² ¹CLS, Ramonville Saint-Agne, France, ²LEGOS, Toulouse, France</i>				
172	Calibration and Intercalibration of the ERS-1/ERS-2/Envisat Microwave Radiometer Time Series: ESA's MWR EMIR Project	Ralf Bennartz	Vanderbilt University University of Wisconsin	USA
<i>Ralf Bennartz^{1,2}, Frank Fell³, Bruno Picard⁴, Stefano Casadio⁵, Martin Stengel⁶, Marc Schröder⁶, Bojan Bajkov⁷, Pierre Féménias⁵ ¹Vanderbilt University, Nashville, United States, ²University of Wisconsin, Madison, United States, ³Informus GmbH, Berlin, Germany, ⁴CLS, Toulouse, France, ⁵ESA-ESRIN, Frascati, Italy, ⁶German Meteorological Service, Offenbach, Germany, ⁷EUMETSAT, Darmstadt, Germany</i>				
173	Developing Long-Term Consistent Altimeter Datasets for the Sentinel Era	Graham Quartly	Plymouth Marine Laboratory	UK
<i>Graham Quartly¹, Francesco Nencioli¹, Sylvie Labroue², Pierre Femenias³, Remko Scharroo⁴, Marie-Laure Frery², Saleh Abdalla⁵, Matthias Raynal², Pablo Garcia⁶, Albert Garcia⁶, Alan Muir⁷ ¹Plymouth Marine Laboratory, Plymouth, UK, ²CLS, Toulouse, France, ³ESA-ESRIN, Frascati, Italy, ⁴EUMETSAT, Darmstadt, Germany, ⁵ECMWF, Reading, UK, ⁶IsardSAT, Barcelona, Spain, ⁷University College London, London, UK</i>				
174	CryoSat Precise Orbit and Long Term Ocean Data Analysis and Validation	Marc Naeije	TU Delft	NL
<i>Marc Naeije¹, Ernst Schrama¹ ¹TU Delft / Space Engineering, Delft, The Netherlands</i>				

175	CryoSat-2 Range, Datation and Interferometer Calibration with Transponders	Albert Garcia-Mondejar	Isardsat Ltd	UK
	<i>Albert Garcia-Mondejar¹, Marco Fornari², Stelios Mertikas³, Jerome Bouffard⁴, Joe Wood¹, Pierre Féménias⁵, Mònica Roca¹ ¹Isardsat Ltd., Guildford, United Kingdom, ²ESA-ESTEC, , The Netherlands, ³Technical University of Crete, Greece, ⁴RHEA-System c/o ESA-ESRIN, Frascati, Italy, ⁵ESA-ESRIN, Frascati, Italy</i>			
176	From Conventional to High Resolution Delay Doppler Altimetry:a Review of the Altimeters Performances over Ocean	Matthias Rayna	CLS	FR
	<i>Matthias Rayna¹, Sylvie Labroue¹, Thomas Moreau¹, François Boy², Nicolas Picot², Salvatore Dinardo³, Pierre Féménias⁴, Jérôme Bouffard⁴, Jérôme Benveniste⁴ ¹CLS, Toulouse, France, ²CNES, Toulouse, France, ³EUMETSAT, Darmstadt, Germany, ⁴ESA-ESRIN, Frascati, Italy</i>			
177	Tropospheric Corrections for Satellite Altimetry: Main Achievements and Perspectives	Joana Fernandes	Universidade Do Porto CIIMAR	PR
	<i>Joana Fernandes^{1,2}, Clara Lázaro^{1,2} ¹Universidade Do Porto-Faculdade De Ciências, Porto, Portugal, ²CIIMAR, Matosinhos, Portugal</i>			
178	Evaluation of Delay-Doppler SAR Processing Algorithms Over Open Ocean	Eduard Makhoul	Isardsat	ES
	<i>Eduard Makhoul¹, Mònica Roca¹, Chris Ray^{1,2}, Roger Escolà¹, Gorka Moyano¹, Albert Garcia-Mondéjar¹, David Cotton³, Marco Restano⁴ ¹Isardsat, Barcelona, Spain, ²Saint Mary's College of California, Moraga, United States, ³SatOC, Bramhall, United Kingdom, ⁴SERCO c/o ESA, Rome, Italy</i>			
179	The Permanent Facility for Satellite Altimetry Calibration in Gavdos/Crete, Greece: Fifteen years of Cal/Val Service	Stelios Mertikas	Technical University of Crete	GR
	<i>Stelios Mertikas¹, Craig Donlon², Pierre Féménias³, Demitris Galanakis⁴, Achilles Tripolitsiotis⁴, Xenophon Frantzis¹ ¹Technical University of Crete, Chania, Crete, Greece, ²ESA-ESTEC, Noordwijk, Netherland, ³ESA-ESRIN, Frascati, Italy, ⁴Space Geomatica P.C., Chania, Greece</i>			
180	International Standardization for Satellite Altimetry Calibration: Lessons from the Past and Roadmap to the Future	Stelios Mertikas	Technical University of Crete	GR
	<i>Pablo Garcia¹ ¹isardSAT SL, Barcelona, Spain</i>			
181	The Sentinel-3 SRAL Instrumental Calibration Monitoring.	Pablo Garcia	IsardSAT	ES
	<i>Kévin Guereiro¹, Sara Fleury¹, Antoine Laforge¹, Benoît Meyssignac¹ ¹LEGOS-CNRS, UMR5566, Toulouse, France</i>			
182	Monitoring Long Term Variations of Arctic Sea Ice Thickness Using Several Satellite Altimetry Missions	Kévin Guereiro	LEGOS-CNRS	FR
	<i>Albert Garcia-Mondejar¹, Stelios Mertikas², Demitris Galanakis², Sylvie Labroue, Jérôme Bruniquel⁶, Graham Quartly⁷, Pierre Féménias⁴, Constantin Mavrocordatos⁵, Pablo Garcia¹, Mònica Roca¹ ¹IsardSAT SL, Barcelona, Spain, ²Technical University of Crete, Greece, ³CLS, Toulouse, France, ⁴ESA-ESRIN, Frascati, Italy, ⁵ESA-ESTEC, Noordwijk, The Netherlands, ⁶ACRI-ST, Sophia-Antipolis, France, ⁷Plymouth Marine Laboratory, Plymouth, United Kingdom</i>			

183	Sentinel-3 Range and Datation Calibration with Crete Transponder	Albert Garcia-Mondejar	IsardSAT	ES
	<i>Zhongxiang Zhao¹, Peter Rhines² ¹Applied Physics Laboratory, University Of Washington, Seattle, United States, ²School of Oceanography, University of Washington, Seattle, United States</i>			
184	Internal Tide Oceanic Tomography	Zhongxiang Zhao	University of Washington	USA
	<i>David Brockley¹ ¹Mullard Space Science Lab, Holmbury St Mary, United Kingdom</i>			
185	The Democratisation of Satellite Data Processing	David Brockley	Mullard Space Science Lab	UK
	<i>Stefano Vignudelli¹, Francesco De Biasio², Andrea Scozzari³, Stefano Zecchetto² ¹CNR-IBF, Pisa, Italy, ²CNR-ISAC, Padova, Italy, ³CNR-ISTI, Italy</i>			
186	Revisiting Sea Level Trends Around Venice Using Tide Gauge Records and Improved Satellite-Based Sea Level Products from ESA CCI Project	Stefano Vignudelli	CNR-IBF	IT
	<i>Stefano Vignudelli¹, Francesco De Biasio², Andrea Scozzari³, Stefano Zecchetto² ¹CNR-IBF, Pisa, Italy, ²CNR-ISAC, Padova, Italy, ³CNR-ISTI, Italy</i>			
187	25 Years of Wet Tropospheric Correction: Short-Term Error Assessment by Comparison to Radiosondes	Marie-Laure Frery	CLS	FR
	<i>Marie-Laure Frery¹, Bruno Picard¹, Mathilde Siméon¹, Christophe Goldstein², Pierre Féménias³, Remko Scharroo⁴ ¹CLS, Ramonville Saint-Agne, France, ²CNES, Toulouse, France, ³ESA-ESRIN, Frascati, Italy, ⁴Eumetsat, Darmstadt, Germany</i>			
188	Comparison of Linear and Nonlinear Impact to Sea Level Variability Based on Satellite Data	Tatyana Belonenko	Saint Petersburg State University	RU
	<i>Tatyana Belonenko¹, Nikita Sandaliuk¹ ¹Saint Petersburg State University, Saint Petersburg, Russian Federation</i>			
189	Validation of Coastal Sea Level Altimetry Data at High Posting Rate:80 Hz, from Sentinel-3A SRAL	Ana I Aldarias	University of Cadiz	ES
	<i>Ana I Aldarias¹, Jesús Gómez-Enri¹, Irene Laiz¹, Begoña Tejedor¹, Stefano Vignudelli², Paolo Cipollini³ ¹University of Cadiz, Puerto Real, Spain, ²Institute of Biophysics, CNR, Pisa, Italy, ³ESA Climate Office, Oxfordshire, United Kingdom</i>			
190	Lessons Learned After 10 Years of Validation of Coastal Altimetry Products in the Gulf of Cadiz and the Srait of Gibraltar (Southwestern Iberian Peninsula)	Jesus Gomez-Enri	University of Cadiz	ES
	<i>Jesus Gomez-Enri¹, Ana Aldarias¹, Stefano Vignudelli², Paolo Cipollini³, Irene Laiz², Marcello Passaro⁴, Begoña Tejedor¹ ¹University Of Cadiz, Puerto Real, Spain, ²Istituto di Biofisica, CNR, Pisa, Italy, ³ESA Climate Office, Oxfordshire, U.K., ⁴Deutsches Geodätisches Forschungsinstitut TUM, Munich, Germany</i>			

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191	Contribution of 25 Years of Radar Altimeter Climate Data Record Towards Quantifying Global Geocentric Sea-Level Rise Over the Past Seven Decades	C.K. Shum	Ohio State University CAS	US
<p><i>C.K. Shum^{1,2}, Chungyen Kuo³, Ting-Yi Yang¹, Junkun Wan¹, Stephane Calmant⁴, Ehsan Forootan⁵, Jun-yi Guo¹, Baki Iz^{1,2}, Yuanyuan Jia¹, Wenhau Lan³, Aive Liibuska⁶, Kuo-Hsin Tseng⁷, Yuchan Yi¹ ¹School of Earth Sciences, Ohio State University, Columbus, United States, ²Institute of Geodesy & Geophysics, CAS, Wuhan, China, ³Department of Geomatics, National Cheng Kung University, Tainan, Taiwan, ⁴IRD, Toulouse, France, ⁵School of Earth & Ocean Science, Cardiff University, Cardiff, United Kingdom, ⁶Institute of Forestry and Rural Engineering, Estonian University of Life Science, Tartu, Estonia, ⁷Center for Space and Remote Sensing Research, National Central University, Taoyuan City, Taiwan</i></p>				
192	Monitoring Topography of Intertidal Zones Using Satellite Radar Altimetry	Frédéric Frappart	GET LEGOS	FR
<p><i>Frédéric Frappart^{1,2}, Edward Salameh^{2,3}, Vincent Marieu⁴, Imen Turki³, Benoît Laignel³ ¹GET, Toulouse, France, ²LEGOS, Toulouse, France, ³M2C, Rouen, France, ⁴EPOC, Bordeaux, France</i></p>				
193	Sea level Change since 2005: Importance of Salinity	William Llovel	CNRS-LEGOS	FR
<p><i>William Llovel¹, Sarah Purkey², Benoit Meyssignac¹, Nicolas Kolodziejczyk³, Alejandro Blazquez¹, Jonathan Bamber⁴ ¹CNRS-LEGOS, Toulouse, France, ²Scripps Institution of Oceanography, University of California San Diego, La Jolla, United States, ³LOPS-CNRS, Brest, France, ⁴University of Bristol, Bristol, United Kingdom</i></p>				
194	Arctic Freshwater Fluxes from Satellite Altimetry and Earth Observation Data	Ole Baltazar Andersen	DTU Space	DK
<p><i>Ole Baltazar Andersen¹, Karina Nielsen¹, Henriette Skourup¹, Louise Sandberg Sørensen¹, Thomas Nagler², Jan Vuite², Alecei Kouraev³, Eena Zakharova³, Diego Fernandez⁴ ¹DTU Space, Kongens Lyngby, Denmark, ²ENVEO, Austria, ³LEGOS, France, ⁴ESA-ESRIN, Frascati, Italy</i></p>				
195	Final Results from GOCE++ Dynamical Coastal Topography and Tide Gauge Unification Using Altimetry and GOCE	Ole Baltazar Andersen	DTU Space	DK
<p><i>Ole Baltazar Andersen¹, Per Knudsen¹, Karin Nielsen¹, Chris Hughes², Phil Woodworth², Luciana Fenoglio-Marc³, Mederic Gravelle⁴, Guy Woppelman⁴, Sara Padillo⁴, Rory Bingham⁵, Michael Kern⁶, Simon Williams² ¹DTU Space, Kongens Lyngby, Denmark, ²NOC, Liverpool, Great Britain, ³University of Bonn, Germany, ⁴University La Rochelle, France, ⁵University of Bristol, Great Britain, ⁶ESA-ESTEC, Netherland</i></p>				
196	A New OGMOC Mean Dynamic Topography Model–DTU17MDT	Per Knudsen	DTU Space	DK
<p><i>Per Knudsen¹, Ole B Andersen¹, Thomas Fecher², Thomas Gruber², Nikolai Maximenko³ ¹DTU Space, Kongens Lyngby, Denmark, ²Institute of Astronomical and Physical Geodesy, TUM, Germany, ³University of Hawaii at Manoa, IPRC, Honolulu, USA</i></p>				
197	A Combined Mean Dynamic Topography Model–DTU17cMDT	Per Knudsen	DTU Space	DK
<p><i>Per Knudsen¹, Ole Andersen¹, Nikolai Maximenko² ¹DTU Space, Kongens Lyngby, Denmark, ²University of Hawaii at Manoa, IPRC, Honolulu, USA</i></p>				
198	Seamless Transition from LRM to SAR in the Arctic Ocean	Stine Kildegaard Rose	DTU Space	DK
<p><i>Stine Kildegaard Rose¹, Ole Baltazar Andersen¹, Carsten Ludwigsen¹ ¹DTU Space, Kongens Lyngby, Denmark</i></p>				

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199	Sea Level Anomalies and Mesoscale Activity Using Altimetry Along the African Coasts in the Eastern Tropical Atlantic Ocean (OSTST Alti-ETAO Project)	Habib Boubacar Dieng	LEGOS	FR
	<i>Habib Boubacar Dieng¹, Isabelle Dadou¹, Fabien Léger¹, Florence Biro¹, Florent Lyard¹, Yves Morel¹, Alexis Chaigneau^{1,2} ¹LEGOS, Toulouse, France, ²IRHOB/CIPMA, Cotonou, Benin</i>			
200	CryoSat Interferometer Performance After 8 Years in Orbit	Michele Scagliola	Aresys Srl	IT
	<i>Michele Scagliola¹, Marco Fornari², Jerome Bouffard³, Tommaso Parrinello³ ¹Aresys Srl, Milan, Italy, ²ESA-ESTEC, Noordwijk, The Netherlands, ³ESA-ESRIN, Frascati, Italy</i>			
201	CryoSat SIRAL: Instrument Performance After 8 Years of Operations	Michele Scagliola	Aresys Srl	IT
	<i>Michele Scagliola¹, Marco Fornari², Jerome Bouffard³, Tommaso Parrinello³ ¹Aresys Srl, Milan, Italy, ²ESA-ESTEC, Noordwijk, The Netherlands, ³ESA-ESRIN, Frascati, Italy</i>			
202	A Validation Dataset For CryoSat Sea Ice Investigators	Julia Gaudelli	UCL	UK
	<i>Julia Gaudelli¹ ¹UCL, Dorking, United Kingdom</i>			
203	How GNSS IPPP Positioning Technique Can Help Space Altimeter Missions?	Felix Perosanz	CNES-GET	FR
	<i>Felix Perosanz¹, Daniel Moreira², Georgia Katsigianni¹, Sylvain Loyer³, Flavien Mercier¹, Jean-Francois Cretaux⁴, Stéphane Calmant⁴, Muriel Bergé⁴, Jean-Charles Marty¹ ¹Cnes-GET, Toulouse, France, ²CPRM, Rio de Janeiro, Brazil, ³CLS, Ramonville, France, ⁴LEGOS-CNES, Toulouse, France</i>			
204	Developments in Sentinel-3 Altimetry for Sea Ice	Steven Baker	UCL-MSSL	UK
	<i>Steven Baker¹, David Brockley¹, Alan Muir¹, Julia Gaudelli¹ ¹UCL-MSSL, Dorking, Surrey, United Kingdom</i>			
205	25 years of Caspian Sea Level Fluctuations and its Regional Variability	Saskia Esselborn	GFZ	DE
	<i>Saskia Esselborn¹, Tilo Schöne¹ ¹GFZ German Research Centre for Geosciences, Potsdam, Germany</i>			
206	Vertical Land Motion Determined by Satellite Altimetry and Tide-Gauge Data in Fennoscandia	Martina Idzanovic	NMBU	NO
	<i>Martina Idzanovic¹, Kristian Breili^{2,3}, Christian Gerlach^{3,1}, Ole Baltazar Andersen⁴ ¹Faculty of Science and Technology, NMBU, Ås, Norway, ²Geodetic Institute, Norwegian Mapping Authority, Hønefoss, Norway, ³Research Group for Geodesy and Glaciology, BADW, Munich, Germany, ⁴DTU Space, Technical University of Denmark, Lyngby, Denmark</i>			

10. Synergy Between Altimetry, Other Data and Models in Support of Operational Oceanography

207	Impact of the Assimilation of High-Resolution and High-Frequency Data in a Regional Model	Mounir Benkiran	Mercator-océan	FR
	<i>Mounir Benkiran¹, Elisabeth Rémy¹, Jean-Michel Lellouche¹, Marie-isabelle Pujol² ¹Mercator-océan, Ramonville St-agne, France, ²CLS, Ramonville St-agne, France</i>			
208	The Multi Observation Thematic Assembly Centre of the Copernicus Marine Environment Monitoring Service	Marie-Helene Rio	CLS	FR
	<i>Stephanie Guinehut¹, Bruno Buongiorno Nardelli², Herve Claustre³, Riccardo Droghei², Helene Etienne¹, Marion Gehlen⁴, Eric Greiner¹, Sandrine Mulet¹, Marie-Helene Rio¹, Nathalie Verbrugge¹ ¹CLS, Ramonville Saint-Agne, France, ²CNR, Roma, Italy, ³Laboratoire d'Océanographie de Villefranche, Observatoire Océanologique de Villefranche, CNRS-INSU, Sorbonne Universités, UPMC University Paris 06, Villefranche-Sur-Mer, France, ⁴Laboratoire des Sciences du Climat et de l'Environnement, Institut Pierre-Simon Laplace, CEA-CNRS-UVSQ, Gif sur Yvette Cedex, France</i>			
209	Tailored Altimeter Products for Assimilation Systems (TAPAS products)	Marie Isabelle Pujol	CLS	FR
	<i>Marie Isabelle Pujol¹, Yannice Faugère¹, Mounir Benkiran², Gérald Dibarboure³ ¹CLS, Ramonville, France, ²Mercator Ocean, Ramonville, France, ³CNES, Toulouse, France</i>			
210	An OSSE to Quantify the Reliability and the Accuracy of Automatic Eddy Detection Performed on Gridded Altimetric Product	Alex Stegner	CNRS	FR
	<i>Alex Stegner¹, Briac LeVu¹, Elodie Charles², Yannice Faugere² ¹CNRS, Ecole Polytechnique, Palaiseau, France, ²CLS, Toulouse, France</i>			
211	Coastal Currents In The Eastern Gulf of Tehuantepec, Mexico	Armando Trasviña-Castro	CICESE	MX
	<i>Armando Trasviña-Castro¹, Juan Pablo Salazar-Ceciliano², Eduardo Gonzalez-Rodriguez¹ ¹CICESE, Unidad La Paz, La Paz, Mexico, ²Departamento de Física, Universidad Nacional de Costa Rica, Heredia, Costa Rica</i>			
212	On the Use of Eddies Detected from Surface Drifters to Quantitatively Validate and Compare the Mesoscale Eddy Atlases Constructed from Altimetry Maps	Rémi Laxenaire	Laboratoire de Météorologie Dynamique	FR
	<i>Rémi Laxenaire¹, Sabrina Speich¹, Alexandre Stegner¹ ¹Laboratoire de Météorologie Dynamique, UMR 8539 Ecole Polytechnique, ENS, CNRS, Paris, France</i>			
213	In Situ and Satellite Altimetry Ocean Currents in a Biologically Productive Region of the Patagonia Continental Shelf, Argentina	Loreley Selene Lago	INIDEP FCEN Universidad de Buenos Aires UMI-IFAECI/CNRS-CONICET-UBA	AR
	<i>Loreley Selene Lago^{1,2,3}, Harold Fenco¹, Patricia Martos^{1,4}, Raul Guerrero¹, Alberto Piola^{2,5}, Christine Provost⁶, Martin Saraceno^{2,3,7} ¹INIDEP, Mar Del Plata, Argentina, 2DCAO, FCEN Universidad de Buenos Aires, Buenos Aires, Argentina, ³UMI-IFAECI/CNRS-CONICET-UBA, Buenos Aires, Argentina, ⁴FCEyN, Universidad Nacional de Mar del Plata, Mar del Plata, Argentina, ⁵Departamento de Oceanografía, SHN, Buenos Aires, Argentina, ⁶Laboratoire d'Océanographie et du Climat: Experimentation et Approches Numériques, UMR 7159, Paris, France, ⁷CIMA-CONICET/UBA, Buenos Aires, Argentina</i>			

25 YEARS OF PROGRESS IN RADAR ALTIMETRY PROGRAMME

POSTER SESSION

214	Synergy between HF Radar and Altimetry in the SE Bay of Biscay <i>Ivan Manso¹, Ainhoa Caballero¹, Anna Rubio¹, Claire Dufau², Florence Biro³ ¹AZTI, Pasaia, Spain, ²CLS, Ramonville St. Agne, France, ³LEGOS, Toulouse, France</i>	Ivan Manso	AZTI	ES
215	On the Approximation of the Inverse Error Covariances of High Resolution Satellite Altimetry Data <i>Joseph D'Addezio¹, Max Yaremchuk², Gleb Panteleev², Gregg Jacobs² ¹University of Southern Mississippi, Hattiesburg, United States, ²Naval Research Laboratory, Stennis Space Center, United States</i>	Joseph D'Addezio	University of Southern Mississippi	USA
216	Study of a Mesoscale Eddy Using Drifters and Coastal Altimetry in the Bay of La Paz, Mexico <i>Maria Yesenia Torres Hernandez¹, Alida Rosina Rosales Villa², Armando Trasviña Castro³ ¹CICIMAR-IPN, La Paz, Mexico, ²CICIMAR-IPN, La Paz, México, ³CICESE Unidad La Paz, La Paz, Mexico</i>	Maria Yesenia Torres Hernandez	CICIMAR-IPN	MX
217	CryoSat-2 On-going Cal/Val and Oceanographic Studies from Pole to Equator <i>Chris Banks¹, Francisco Mir Calafat¹, Paolo Cipollini⁵, Helen Snaith³, Christine Gommenginger², Nadim Dayoub², Andrew Shaw⁴, Jérôme Bouffard⁶, Pierre Féménias⁷ ¹National Oceanography Centre, Liverpool, United Kingdom, ²National Oceanography Centre, Southampton, United Kingdom, ³British Oceanographic Data Centre, Southampton, United Kingdom, ⁴SKYMAT Ltd., Southampton, United Kingdom, ⁵Telespazio Vega UK for ESA Climate Office - ECSAT, Harwell, United Kingdom, ⁶RHEA-ESA, Frascati, Italy, ⁷ESA-ESRIN, Frascati, Italy</i>	Chris Banks	National Oceanography Centre	UK
218	Malvinas Current at 44.7°S: Analysis of its Variability from in-situ Data and 25 years of Satellite Altimetry Data <i>Guillermina F. Paniagua^{1,2,3}, Martín Saraceno^{1,2,3}, Ramiro Ferrar^{1,3}, Loreley Lago^{2,3,4}, Camila Artana⁶, Alberto R. Piola^{2,3,5}, Raúl Guerrero⁴ ¹CIMA-CONICET/UBA, Buenos Aires, Argentina, ²Departamento de Ciencias de la Atmósfera y de los Océanos, FCEN, Universidad de Buenos Aires, Buenos Aires, Argentina, ³UMI-IFAECI/CNRS-CONICET-UBA, Buenos Aires, Argentina, ⁴Instituto Nacional de Investigación y Desarrollo Pesquero, Mar del Plata, Argentina, ⁵Departamento de Oceanografía, SHN, Buenos Aires, Argentina, ⁶Laboratoire d'Océanographie et du Climat: Experimentation et Approches Numériques, UMR 7159, Paris, France</i>	Guillermina F. Paniagua	CIMA-CONICET/UBA Universidad de Buenos Aires UMI-IFAECI/CNRS-CONICET-UBA	AR
219	Effect of Altimeter Data Assimilation on the Ecosystem Distributions in the Japan Sea <i>Katsumi Takayama¹, Naoki Hirose¹ ¹Research Institute For Applied Mechanics, Kyushu University, Kasuga, Japan</i>	Katsumi Takayama	Kyushu University	JP
220	Altimeter Assimilation with Offline Estimates of Non-Steric Sea Surface Height Variations <i>Norihisa Usui¹, Takahiro Toyoda¹, Tsurane Kuragano^{1,2}, Nariaki Hirose¹, Yosuke Fujii¹, Hiroyuki Tsujino¹ ¹Meteorological Research Institute, Tsukuba, Japan, ²Tokyo University of Science, Tokyo, Japan</i>	Norihisa Usui	Meteorological Research Institute	JP

221	Impact of Assimilated Altimetric Observations in the Mercator Océan Forecasting System <i>Mathieu Hamon¹, Elisabeth Remy¹, Matthieu Clavier¹, Drillet Yann¹ ¹Mercator Océan, Ramonville-Saint-agne, France</i>	Mathieu Hamon	Mercator Océan	FR
222	Detection of Ships Using Sentinel-3A SRAL Altimeter Waveforms <i>Jesus Gomez-Enri¹, Roberto Mulero¹, Stefano Vignudelli², Andrea Scozzari³ ¹University Of Cadiz, Puerto Real, Spain, ²CNR, Pisa, Italy, ³Institute of Information Science and Technologies-CNR, Pisa, Italy</i>	Jesus Gomez-Enri	University of Cadiz	ES
223	Monitoring the Algerian Basin Through Glider Observations, Satellite Altimetry and Numerical Simulations During the ABACUS Projects (2014-2018) <i>Giuseppe Aulicino^{1,2}, Yuri Cotroneo², Simon Ruiz³, Ananda Pascual³, Antonio Sanchez Roman³, Giannetta Fusco², Marc Torner³, Emma Heslop⁴, Giorgio Budillon², Joaquin Tintoré^{3,4} ¹Università Politecnica Delle Marche, Ancona, Italy, ²Università degli Studi di Napoli Parthenope, Napoli, Italy, ³IMEDEA (CSIC-UIB), Esporles, Spain, ⁴SOCIB, Palma de Mallorca, Spain</i>	Giuseppe Aulicino	Università Politecnica Delle Marche Università degli Studi di Napoli Parthenope	IT
224	Reconstruction of the West Spitsbergen Current Using a Combination of Observations from Satellite Altimetry, Numerical Model and In Situ <i>Anna Bulczak¹, Prof Waldemar Walczowski² ¹IsardSat, Gdansk, Poland, ²Institute of Oceanology, Polish Academy of Sciences, Sopot, Poland</i>	Anna Bulczak	IsardSat	PL
225	Impact of a New High Resolution Mean Dynamic Topography and its Associated Error on the Assimilation of Sea Level Anomaly Altimetry Data in Mercator Ocean Reanalyses at ¼° and 1/12° <i>Jean-Michel Lellouche¹, Eric Greiner² ¹Mercator Ocean, Ramonville Saint Agne, France, ²CLS, Ramonville Saint Agne, France</i>	Jean-Michel Lellouche	Mercator Ocean	FR
226	New Connections Across the Ecosystem Due to Transport of Anthropogenic Marine Debris By Ocean Circulation <i>Nikolai Maximenko¹, Jan Hafner¹, Masafumi Kamachi², Amy MacFadyen³, Cathryn Clarke Murray⁴, James Carlton⁵, Gregory Ruiz⁶ ¹University of Hawaii, United States, ²JAMSTEC, Japan, ³NOAA Office of Response and Restoration, Emergency Response Division, United States, ⁴Institute of Ocean Sciences, Canada, ⁵Williams College, United States, ⁶Smithsonian Institution, United States</i>	Nikolai Maximenko	University of Hawaii	USA
227	Coastal and Regional Sea Level Rise in Indonesia <i>Julia Illigner¹ ¹GFZ-German Research Centre for Geosciences, Potsdam, Germany</i>	Julia Illigner	GFZ	DE

25 YEARS OF PROGRESS IN RADAR ALTIMETRY PROGRAMME**POSTER SESSION**

228	Recent Developments in Altimeter Data Assimilation in the Global FOAM System <i>Daniel Lea¹, Matthew Martin¹, Daley Calvert¹, Jennie Waters¹ ¹Met Office, Exeter, United Kingdom</i>	Daniel Lea	Met Office	UK
229	Influence of Eddies and Tropical Cyclone Heat Potential on Intensification Changes of Tropical Cyclones in the North Indian Ocean <i>Babita Jangir¹, Samar Ghose¹, Debadatta Swain¹ ¹Indian Institute of Technology Bhubaneswar, Argul, India</i>	Debadatta Swain	Indian Institute of Technology Bhubaneswar	IN
230	Altimetry and Ocean Prediction: A GODAE OceanView Perspective <i>Eric Chassignet¹, GODAE OceanView Science Team² ¹COAPS-Florida State University, Tallahassee, United States, ²GODAE OceanView</i>	Eric Chassignet	COAPS-Florida State University	USA
231	Comparison of Sea Level Time Series from Coastal Altimetry and In-Situ Observations in the Mexican Pacific Coast <i>Jorge Manuel Montes Arechiga¹, Anatoliy E. Filonov¹, Diego A. Pantaja González¹, Iryna Tereshchenko¹ ¹Universidad De Guadalajara, Guadalajara, Mexico</i>	Jorge Manuel Montes Arechiga	Universidad De Guadalajara	MX
232	Assessment of Ocean Models Against Altimetric and Gravimetric Measurements from Space <i>Luciana Fenoglio¹, Joanna Staneva², Andrea Storto³, Antonio Bonaduce⁴, Bernd Uebbing¹, Roelof Rietbroek¹, Jürgen Kusche¹ ¹Institute of Geodesy, University of Bonn, Bonn, Germany, ²Institute of Coastal Research Helmholtz-Zentrum, Geesthacht, Germany, ³NATO Centre for Maritime Research, La Spezia, Italy, ⁴Mercator Ocean, Ramonville St-Agne, France</i>	Luciana Fenoglio	University of Bonn	DE

11. Outreach, Education and Altimetric Data Services

233	SAR Altimetry Processing on Demand Service for CryoSat-2 and Sentinel-3 at ESA G-POD <i>Jérôme Benveniste¹, Salvatore Dinardo², Giovanni Sabatino³, Marco Restano⁴, Américo Ambrózio⁵ ¹ESA-ESRIN, Frascati, Italy, ²He Space-EUMETSAT, Darmstadt, Germany, ³Progressive Systems-ESRIN, Frascati, Italy, ⁴SERCO/ESA-ESRIN, Frascati, Italy, ⁵DEIMOS/ESA-ESRIN, Frascati, Italy</i>	Jérôme Benveniste	ESA	IT
234	Broadview Radar Altimetry Toolbox <i>Albert Garcia-Mondejar¹, Roger Escolà¹, Gorka Moyano¹, Mònica Roca¹, Miguel Terra- Homem², Ana Friaças², Fernando Martinho², Ernst Schrama³, Marc Naeije³, Marco Restano⁴, Americo Ambrózio⁵, Jérôme Benveniste⁶ ¹Isardsat Ltd., Guildford, United Kingdom, ²DEIMOS Engenharia, Lisbon, Portugal, ³TU Delft, Faculty of Aerospace Engineering, Delft, The Netherlands, ⁴SERCO/ESA-ESRIN, Frascati, Italy, ⁵DEIMOS/ESA-ESRIN, Frascati, Italy, ⁶ESA-ESRIN, Frascati, Italy</i>	Albert Garcia-Mondejar	Isardsat	ES

235	GOCE User Toolbox and Tutorial <i>Per Knudsen¹, Jerome Benveniste², Et Al³ ¹DTU Space, Kongens Lyngby, Denmark, ²ESA-ESRIN, Frascati, Italy, ³GUT Team</i>	Per Knudsen	DTU Space	DK
236	Four Years of G-POD SAR Service: A Story of Success <i>Salvatore Dinardo⁵, Jerome Benveniste¹, Giovanni Sabatino², Marco Restano³, Americo Ambrozio⁴ ¹ESA-ESRIN, Frascati, Italy, ²ESA-RSS, Frascati, Italy, ³Serco-ESRIN, Frascati, Italy, ⁴DEIMOS-ESRIN, Frascati, Italy, ⁵He Space, Darmstadt, Germany</i>	Salvatore Dinardo	ESA	IT
237	25 Years of Societal Benefits from Ocean Altimetry Mission Data <i>Margaret Srinivasan¹ ¹Jet Propulsion Laboratory, Pasadena, United States</i>	Margaret Srinivasan	JPL	USA
238	The Research and User Support (RUS) Service: a New Free Expert Service for Sentinel Data Users <i>Isabelle Soleilhavoup¹, Eric Jeansou¹, Pierre Fabry³, Eric Guzzonato², Brice Mora², Sylvie Remondiere⁴, Francesco Palazzo⁴ ¹NOVELTIS, Labège, France, ²C-S, Toulouse, France, ³Along-Track, Brest, France, ⁴Serco, Roma, Italia</i>	Isabelle Soleilhavoup	NOVELTIS	FR
239	Outreaching Hydrology from Space & SWO <i>Vinca Rosmorduc¹, Nicolas Picot² ¹CLS, Ramonville Stagne, France, ²CNES, Toulouse, France</i>	Vinca Rosmorduc	CLS	FR

12. Outlook on Future Missions Requirements

240	Contribution of Wide-Swath Altimetry Missions to the Ocean Analysis and Forecasting System in the Iberia-Biscay-Ireland (IBI) Region <i>Mounir Benkiran¹, Antonio Bonaduce¹, Elisabeth Rémy¹, Pierre-Yves Le traon^{1,2} ¹Mercator-océan, Ramonville St-agne, France, ²IFREMER, Toulouse, France</i>	Mounir Benkiran	Mercator-océan	FR
241	Improved Retrieval of Titan Surface Topography from the Delay-Doppler Algorithm Applied to Cassini Radar Altimeter Data <i>Valerio Poggiali¹, Alexander G. Hayes¹, Marco Mastrogiuseppe², Roberto Seu², Joseph Mullen¹, Peter G. Ford³, Samuel Birch¹, Mariacarmela Ragusa² ¹Cornell University, Ithaca, United States, ²La Sapienza Università di Roma, Roma, Italy, ³MIT, Cambridge, United States</i>	Valerio Poggiali	Cornell University	USA
242	New Altimetry Missions to Observe the Cryosphere <i>Bjoern Barthen¹, Robert Cullen², Yves Le Roy³, Harald Feuer⁴, Klaus-Werner Kruse¹, Friedhelm Rostan¹ ¹Airbus, Immenstaad, Germany, ²ESQ, Noordwijk, The Netherlands, ³Thales Alenia Space, Toulouse, France</i>	Bjoern Barthen	Airbus	DE

243	Data-Driven and Learning-Based Approaches for the Spatio-Temporal Interpolation of SLA Fields from Current and Future Satellite-Derived Altimeter Data	Ronan Fablet	Imt Atlantique	FR
<i>Ronan Fablet¹, Manuel Lopez-Radencos¹, Said Oualal¹, Redouane Lguensat², Laura Gomez-Navarro^{2,3}, Ananda Pascual³, Fabrice Collard⁵, Lucile Gaultier⁵, Bertrand Chapron⁴, Jacques Verron² ¹Imt Atlantique, Brest, France, ²IGE, CNRS, Grenoble, France, ³IMEDEA, Esporles, Spain, ⁴Ifremer, LOPS, Brest, France, ⁵ODL, Brest, France</i>				
244	Experiment at the International Space Station: a Microwave Radar With Scanning Fan Beam Antenna at Nadir Probing	Vladimir Karaev	Institute of Applied Physics Ras	RU
<i>Vladimir Karaev¹, Dr. Maria Panfilova¹, Dr. Yury Titchenko¹, Eugeny Meshkov¹, Maria Ryabkova¹ ¹Institute of Applied Physics Ras, Nizhny Novgorod, Russian Federation</i>				
245	On the Assimilation of High-Resolution Wide-Swath Altimetric Data	Emmanuel Cosme	University of Grenoble Alpes, IRD, CNRS, Grenoble INP, IGE	FR
<i>Emmanuel Cosme¹, Nora Poel¹, Laura Gómez Navarro^{1,2}, Jean-Michel Brankart¹, Julien Le Sommer¹, Ananda Pascual², Jean-Marc Molines¹ ¹University of Grenoble Alpes, IRD, CNRS, Grenoble INP, IGE, Grenoble, France, ²IMEDEA (UIB-CSIC), Esporles, Spain</i>				
246	Ku/Ka Radar Altimeter for a Polar Ice and Snow Topography Mission	Yves Le Roy	Thales Alenia Space	FR
<i>Yves Le Roy¹, Benjamin Carayon¹, Robert Cullen², Erik De Witte² ¹Thales Alenia Space, Toulouse, France, ²ESA-ESTEC, Noordwijk, The Netherlands</i>				
247	Sentinel-3 Topography Mission Payload	Alexandre Houpert	Thales Alenia Space	FR
<i>Alexandre Houpert¹, Franck Borde², Constantin Mavrocordatos², Vanin Felice² ¹Thales Alenia Space, Toulouse, France, ²ESA-ESTEC, Noordwijk, The Netherlands</i>				
248	Swath Altimetry for Operational Oceanography	Franck Demeestere	Thales Alenia Space	FR
<i>Franck Demeestere¹, Anne Duclos¹, Laurent Phalippou, Laurent Rey¹, Benjamin Monteillet¹, Erik De Witte², Craig Donlon², Cécile Cheymol³, Alain Mallet³ ¹Thales Alenia Space, Toulouse, France, ²ESA-ESTEC, Noordwijk, The Netherlands, ³CNES, Toulouse, France</i>				
249	Design Status of the Ka-Band Scanning Doppler Scatterometer for the SKIM Mission	Eric Caubet	Thales Alenia Space	FR
<i>Eric Caubet¹, Erik De Witte², Bertrand Chapron⁴, Laurent Phalippou¹, Céline Tison³, Frédéric Nouguier⁴, Jean-Claude Lalaurie³, Laurent Rey¹ ¹Thales Alenia Space, Toulouse, France, ²ESA-ESTEC, Noordwijk, The Netherlands, ³CNES, Toulouse, France, ⁴IFREMER, Plouzané, France</i>				
250	Technical Challenges and Status of the Ka-Band Interferometric Radio-Frequency Unit for the SWOT Mission	Frederic Robert	Thales Alenia Space	FR
<i>Sophie Ramongassie¹, Frederic Robert¹, Nicolas Taveneau¹, Guy Michaud¹, Cecile Cheymol², Emmanuel Robert², Pierre Sengenes² ¹Thales Alenia Space, Toulouse, France, ²CNES, Toulouse, France</i>				

251	Sentinel-6 Level-1 Poseidon-4 Ground Processor Prototype Architecture and Processing Modes	Gorka Moyano	IsardSAT	ES
	<i>Gorka Moyano¹, Eduard Makhoul¹, Roger Escolà¹, Pablo García¹, Albert Garcia-Mondéjar¹, Mònica Roca¹, Marco Fornari², Robert Cullen³ ¹IsardSAT, Barcelona, Spain, ²RHEA-ESTEC, Noordwijk, The Netherlands, ³ESA-ESTEC, Noordwijk, The Netherlands</i>			
252	Surface Water Ocean Topography Mission Retrievals in the Ice-Covered Polar Oceans	Thomas Armitage	JPL	US
	<i>Thomas Armitage¹, Ron Kwok¹ ¹JPL, Pasadena, United States</i>			
253	High Temporal SSH Measurements Using Wideband Ku-Band Signals of Opportunity	Rashmi Shah	NASA	USA
	<i>Rashmi Shah¹, James Garrison², Soon Chye Ho², Zhijin Li², Y. Tony Song¹ ¹JPL-NASA, Pasadena, United States, ²Purdue University, West Lafayette, United States</i>			
254	SWOT in the Tropics: Designing a Joint In Situ Experiment with SWOT during the Fast-Sampling Phase to Sample Small-Scale Dynamics around New-Caledonia	Guillaume Sérazin	LEGOS/IRD	FR
	<i>Guillaume Sérazin¹, Frédéric Marin¹, Lionel Gourdeau¹, Mei-Ling Dabat² ¹LEGOS/IRD, Toulouse, France, ²LEGOS, Toulouse, France</i>			
255	Transition of SAR Interferometric Altimetry from R&D to Operations	Mark Drinkwater	ESA	NL
	<i>Mark Drinkwater¹, Robert Cullen¹, Craig Donlon¹, Noel Gourmelen¹, Michael Kern¹, Constantin Mavrocordatos¹, Gerhard Ressler¹, Andrew Shepherd², Noel Gourmelen³ ¹ESA, Noordwijk, The Netherlands, ²University of Leeds, Leeds, United Kingdom, ³University of Edinburgh, Edinburgh, United Kingdom</i>			
256	S6 P4 GPP: The Sentinel-6 Poseidon-4 Ground Processor Prototype. Performance Validation	Eduard Makhoul	Isardsat	ES
	<i>Eduard Makhoul¹, Gorka Moyano¹, Roger Escolà¹, Pablo García¹, Albert Garcia-Mondéjar², Mònica Roca¹, Marco Fornari³, Mieke Kuschnerus⁴, Robert Cullen⁴ ¹Isardsat, Barcelona, Spain, ²IsardSAT Ltd., Guildford, United Kingdom, ³ESA-RHEA, Noordwijk, The Netherlands, ⁴ESA-ESTEC, Noordwijk, The Netherlands</i>			
257	The Altimeter Product Suite for Sentinel-6/Jason-CS Mission	Remko Scharroo	EUMETSAT	DE
	<i>Remko Scharroo¹, Cristina Martin-Puig¹, Carolina Nogueira Loddó¹, Rob Cullen², Marco Fornari², Mònica Roca³, Thomas Moreau⁴ ¹EUMETSAT, Darmstadt, Germany, ²ESA-ESTEC, Noordwijk, The Netherlands, ³IsardSAT, Barcelona, France, ⁴CLS, Ramonville-St. Agne, France</i>			

This is a meeting for all those who analyze DORIS data, use products derived from DORIS data, or who are involved with the DORIS network. The meeting will highlight current developments and the status of scientific results that use DORIS data, and will provide a platform for discussion and coordination of future activities. The session will include oral presentations and posters.

SESSION I: DORIS network and constellation: status and evolution

SESSION II: IDS Processing and Plans for the Next ITRF

SESSION III: Precise Orbit Determination

SESSION IV: Research activities and new applications

IDS workshop sessions		
Monday, September 24 2018		
14:30-16:10	SESSION I: DORIS network and constellation: status and evolution	Lagoa Do Fogo
16:40-18:20	SESSION II: IDS Processing and Plans for the Next ITRF	Lagoa Do Fogo
Tuesday, September 25 2018		
14:00-15:40	SESSION III: Precise Orbit Determination	Lagoa Do Fogo
16:10-17:30	SESSION IV: Research activities and new applications	Lagoa Do Fogo
Wednesday, September 26 2018		
08:30-12:20	Governing Board Meeting	Lagoa Do Fogo

ORAL SESSIONS

Lagoa Do Fogo

14:30-16:10 SESSION I: DORIS Network and Constellation: Status and Evolution Chairs: Hugues Capdeville - Frank Lemoine

14:30-14:40 Welcome

Frank Lemoine (NASA/GSFC, United States)

14:40-15:00 DORIS System Status and Future Missions

Pascale Ferrage (CNES, France), Cécile Manfredi (CNES, France), Christian Jayles (CNES, France)

15:00-15:20 DORIS Network 2018 Status Report

Jérôme Saunier (IGN, France)

15:20-15:40 The International DORIS Service: Status Report

Laurent Soudarin (CLS, France), Pascale Ferrage (CNES, France)

15:40-16:00 Noise analysis in the DORIS station position time series with a view to assessing the monument stability

*Jérôme Saunier (IGN, France), Guilhem Moreaux (CLS, France)*16:10 - 16:40 **Coffee Break****16:40- 18:20 SESSION II: IDS Processing and Plans for the Next ITRF** Chairs: Jean-Michel Lemoine - Guilhem Moreaux

16:40-17:00 Improvement of the CNES/CLS IDS Analysis Center solution for the contribution to the next ITRF

Hugues Capdeville (CLS, France), Jean-Michel Lemoine (CNES, FRANCE)

17:00 - 17:20 Station Positions and Earth Rotation Parameters from JASON-1, JASON-2, and ENVISAT

Rolf Koenig (GFZ German Research Centre for Geosciences, Germany), Anton Reinhold (GFZ German Research Centre for Geosciences, Germany), Susanne Glaser (GFZ German Research Centre for Geosciences, Germany), Karl Hans Neumayer (GFZ German Research Centre for Geosciences, Germany)

17:20 - 17:40 Improvements to the GSC Processing and their Impact on Geodetic Products

Frank Lemoine (NASA GSFC, United States), Nikita Zelensky (SGT Inc, U.S.A.), Alexandre Belli (NPP/USRA @ NASA GSFC, U.S.A.), Douglas Chinn (SGT Inc., U.S.A.), Despina Pavlis (ESSIC @ University of Maryland/College Park, U.S.A.), Taylor Thomas (Emergent Space Technologies, U.S.A.)

17:40 - 18:00 DORIS scale consistency in GOP time series

Petr Stepanek (Geodetic Observatory Pecny, VUGTK, Czech Republic)

18:00 - 18:20 IDS Combined Solution: on the way to the ITRF2020

Guilhem Moreaux (CLS, France)

10:10 - 10:40 **Coffee Break**

12:20 - 14:00 **Lunch**

14:00 - 15:40 **SESSION III: Precise Orbit Determination**

Chairs: Alexandre Couhert - Petr Stepanek

14:00 - 14:20 The new time-variable gravity field model for POD of altimetric satellites based on GRACE+SLR RL04 from CNES/GRGS

Jean-Michel Lemoine (CNES, France), Stéphane Bourgogne (Géode & Cie, France), Richard Biancale (CNES, France), Franck Reinquin (CNES, France)

14:20 - 14:40 Pre-GRACE era recovery of time-varying DORIS-based mass concentration parameters for TOPEX/Poseidon precise orbit determination.

John Moyard (CNES, France), Alexandre Couhert (CNES, France), Flavien Mercier (CNES, France)

14:40 - 15:00 Copernicus POD Service - Sentinel-3 orbit determination based on DORIS observations

Heike Peter (PosiTIm UG, Germany), Jaime Fernández (GMV AD, Spain), Pierre Féménias (ESA/ESRIN, Italy)

15:00 - 15:20 IDS DORIS RINEX Processing at the European Space Operations Centre

Michiel Otten (ESA/ESOC, Germany), Werner Enderle (ESA/ESOC, Germany)

15:20 - 15:40 Status of SLR and DORIS data processing of Jason satellites at DGFI-TUM

Sergei Rudenko (DGFI-TUM, Germany), Mathis Bloßfeld (DGFI-TUM, Germany), Denise Dettmering (DGFI-TUM, Germany), Frank G. Lemoine (NASA GSFC, USA)

15:40 - 16:10 **Coffee Break**

16:10 - 17:30 SESSION IV: Research activities and new applications**Chairs: Denise Dettmering - Pascal Willis****16:10 - 16:30** The impact of low-latency DORIS data on near real-time VTEC modeling

Eren Erdogan (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München (DGFI-TUM), Germany), Denise Dettmering (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München (DGFI-TUM), Germany), Michael Schmidt (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München (DGFI-TUM), Germany), Andreas Goss (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München (DGFI-TUM), Germany)

16:30 - 16:50 Consistency of the DORIS and GPS assessments for real-time global ionospheric maps

Wang Ningbo (Academy of Opto-Electronics, Chinese Academy of Science, China), Zishen Li (Academy of Opto-Electronics, Chinese Academy of Science, China)

16:50 - 17:10 Architecture for a Combined DORIS-GNSS Receiver

Christian Jayles (CNES, France)

17:10 - 17:30 A model for DORIS USO in the SAA

Eva Jalabert (CNES, France)

08:30 - 12:20 Governing Board Meeting**Chair: Frank Lemoine****08:30 - 12:30** Discussions**10:10 - 10:40 Coffee Break****12:20 - 14:00 Lunch**

POSTERS

Lagoa do fogo

IDS1_001 NASA CDDIS: Important Changes to User Access

Carey Noll (NASA GSFC), Benjamin Patrick Michael (NASA GSFC)

IDS1_002 About the DORIS Station in Ponta Delgada

Guilhem Moreaux (CLS), Jérôme Saunier (IGN), Christian Jayles (CNES), Philippe Yaya (CLS)

IDS1_003 An Atlantic Network of Geodynamic and Space Stations (project RAEGE)

Susana García-Espada (Instituto Geográfico Nacional (IGE), RAEGE Santa Maria), Ruben Bolano Gonzalez (Instituto Geográfico Nacional (IGE), RAEGE Santa Maria), Luis R. Santos (RAEGE Santa Maria), Sara V. Pavão (RAEGE Santa Maria), Pablo de Vicente (Instituto Geográfico Nacional (IGE)), José Antonio López Fernández (Instituto Geográfico Nacional (IGE))

The annual meeting of the Ocean Surface Topography Science Team (OSTST), will be held in the second part of the “25 Years of Progress in Radar Altimetry” Symposium and will address specific issues on the TOPEX/Poseidon-Jason series of missions, including algorithm and model improvement, Cal/Val activities, merging with other altimetric satellites (CryoSat-2, SARAL/AltiKa, HY-2, Sentinel-3), and preparation for the Sentinel-6/Jason-CS and SWOT missions.

OSTST Meeting sessions		
Thursday, September 27 2018		
09:30-12:45	OSTST Opening plenary Session	Teatro Auditorium
14:00-18:00	Instrument Processing: Measurements and Retracking	Teatro Auditorium
14:00-15:45	Outreach, Education and Altimetric Data Services	Lagoa Do Congro
14:00-18:00	Precision Orbit Determination	Lagoa Das 7 Cidades
16:15-18:00	Quantifying Errors and Uncertainties in Altimetry data	Lagoa Do Congro
18:00-20:00	Poster Session 1 & Cocktail	Foyer, Salao Nobre & tent
Friday, September 28 2018		
09:00-10:30	Application development for Operations	Lagoa Das 7 Cidades
09:00-12:30	Regional and Global CAL/VAL for Assembling a Climate Data Record	Teatro Auditorium
09:00-10:30	The Geoid, Mean Sea Surfaces and Mean Dynamic Topography	Lagoa Do Congro
11:00-12:30	Instrument Processing: Propagation, Wind Speed and Sea State Bias	Lagoa Das 7 Cidades
11:00-12:30	Tides, internal tides and high-frequency processes	Lagoa Do Congro
14:00-15:00	Poster session 2	Foyer, Salao Nobre & tent
15:30-18:00	OSTST Closing Plenary Session	Teatro Auditorium

ORAL SESSIONS

Teatro Auditorium

09:30-12:45 **OSTST Opening Plenary Session** Chairs: Pascal Bonnefond - Craig Donlon - Eric Leuliette - Remko Scharroo - Josh Willis

09:30-09:35 Welcoming remarks and meeting overview

Pascal Bonnefond (Observatoire de Paris - SYRTE, France)

09:30-10:00 NASA/CNES/EUMETSAT/NOAA/ESA program status

Program Managers (NASA/CNES/EUMETSAT/NOAA/ESA)

10:00-10:15 Jason-2 mission overview

Christophe Maréchal (CNES, France)

10:15-10:30 Jason-3 mission overview

Christophe Maréchal (CNES, France)

10:30-11:00 **Coffee Break**

11:00-11:15 SARAL/AltiKa mission overview

Nadège Queruel (CNES, France)

11:15-11:30 Sentinel-3 mission overview

Craig Donlon (ESA/ESTEC, The Netherlands), Remko Scharroo (EUMETSAT, Germany)

11:30-11:45 Sentinel-6/Jason-CS news and developments

Pierrick Vuilleumier (ESA/ESTEC, Netherlands), John Loving (NOAA, United States), François Parisot (EUMETSAT, Germany), Parag Vaze (NASA/JPL, United States), Gilles Tavernier (CNES, France)

11:45-12:00 SWOT status

Lee-Lueng Fu (JPL, United States), Rosemary Morrow (LEGOS, France)

12:00-12:15 CFOSAT: A new satellite for the observation of wind and waves

Cédric Tourain (CNES, France)

12:15-12:30 Future Missions: The Copernicus Polar Ice and Snow Topography Mission and ESA EE9 Sea surface KInematics Multiscale monitoring (SKIM) Mission

Craig Donlon (ESA/ESTEC, The Netherlands), Robert Cullen (ESA/ESTEC, The Netherlands), Fabrice Ardhuin (LOPS, France)

12:30-12:45 Topics to be discussed in the splinters

Remko Scharroo (EUMETSAT, Germany)

12:45-14:00 **Lunch**

14:00-18:00 **Instrument Processing: Measurement and Retracking**

Chairs: Francois Boy - Phil Callahan - Robert Cullen - Jean-Damien Desjonqueres - Alejandro Egido - Cristina Martin-Puig - Walter H.F. Smith

14:00-14:15 Sentinel-6 Poseidon-4 RMC mode processing and expected performance

Mieke Kuschnerus (ESA, Netherlands)

14:15-14:30 Fast and accurate Delay/Doppler processing: applying range walk compensation while preserving the computational complexity

Michele Scagliola (Aresys, Italy), Marco Fornari (ESA, The Netherlands), Lisa Recchia (Aresys, Italy)

14:30-14:45 Impact of Geoid Curvatures and Slopes on LRMC, RDSAR and SAR Mode Waveforms

Christopher Buchhaupt (TU Darmstadt, Germany), Luciana Fenoglio-Marc (Univeristy of Bonn, Germany), Salvatore Dinardo (HeSpace/EUMETSAT, Germany), Remko Scharroo (EUMETSAT, Germany), Jerome Benveniste (ESA/ESRIN, Italy), Matthias Becker (TU Darmstadt, Germany),

14:45-15:00 From unfocused to fully focused SAR processing: illustrations of potential benefits for different surfaces

Pierre Rieu (CLS, France), Thomas Moreau (CLS, France), Laiba Amarouche (CLS, France), Pierre Thibaut (CLS, France), François Boy (CNES, France), Sophie Le Gac (CNES, France), Nicolas Picot (CNES, France), Franck Borde (ESA, The Netherlands), Constantin Mavrocordatos (ESA, The Netherlands)

15:00-15:15 A coherent processing approach with improved performance capabilities for measuring ocean surface parameters

Thomas Moreau (CLS, France), Pierre Rieu (CLS, France), Jérémie Aublanc (CLS, France), Matthias Raynal (CLS, France), Ngan Tran (CLS, France), Pierre Thibaut (CLS, France), François Boy (CNES, France), Nicolas Picot (CNES, France), Franck Borde (ESA, The Netherlands), Constantin Mavrocordatos (ESA, The Netherlands)

15:15-15:30 A waveform model for fully focused SAR altimetry

Chris Ray (Saint Mary's College of California/NOAA, United States), Alejandro Egido (NOAA, UNITED STATES)

15:30-15:45 Towards the Optimization of SAR Altimetry Processing Over the Open Ocean

Alejandro Egido (NOAA / GST, United States), Chris Ray (SMC / NOAA, United States)

15:45-16:15 **Coffee break**

16:15-16:30 Toward a CryoSat-2 / Sentinel-3 continuum of sea-ice thickness and volume observations

Antoine Laforge (LEGOS, France), Sara Fleury (LEGOS/CTOH, France), Kévin Guerreiro (LEGOS, France), Florence Birol (LEGOS, France), Salvatore Dinardo (EUMETSAT, Germany), Giovanni Sabatino (ESRIN, Italy), Jérôme Benveniste (ESRIN/ESA, Italy), Jérôme Bouffard (ESRIN/ESA, Italy)

16:30-16:45 Better than Averaging : Empirical correction for Intra-1Hz correlations

Graham Quartly (Plymouth Marine Laboratory, United Kingdom), Walter Smith (NOAA, UNITED STATES), Marcello Passaro (Technical Universität Muenchen, Germany)

16:45-17:00 Early results from Sentinel-3B commissioning phase

François Boy (CNES, France), Franck Borde (ESTEC, The Netherlands), Nicolas Picot (CNES, France), Fanny Piras (CLS, France), Matthias Raynal (CLS, France), Pierre Thibaut (CLS, France), Amandine Guillot (CNES, France)

17:00-17:15 Assessing high-wavenumber spectral slopes (and effective resolution) in new altimeter products

Sarah Gille (Scripps Institution of Oceanography, UC San Diego, United States), Jessica Masich (Scripps Institution of Oceanography, UC San Diego, UNITED STATES), Teresa Chereskin (Scripps Institution of Oceanography, UC San Diego, United States), Marcello Passaro (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München, Germany), Saulo Soares (Scripps Institution of Oceanography, UC San Diego, United States)

17:15-17:30 Status and Perspectives for Wave Height estimation from altimeter measurements

Pierre Thibaut (CLS, France), Thomas Moreau (CLS, France), Laiba Amarouche (CLS, France), Pierre Rieu (CLS, France), Fanny Piras (CLS, France), François Boy (CNES, France), Nicolas Picot (CNES, France), Franck Borde (ESA, The Netherlands), Constantin Mavrocordatos (ESA, The Netherlands)

17:30-17:45 A Numerical Retracking Approach for TOPEX Data Reprocessing

Jean-Damien Desjonqueres (NASA Jet Propulsion Laboratory, United States), Philip Callahan (NASA Jet Propulsion Laboratory, UNITED STATES), Shailen Desai (NASA Jet Propulsion Laboratory, UNITED STATES), Matthieu Talpe (NASA Jet Propulsion Laboratory, UNITED STATES)

17:45-18:00 Discussion

ORAL SESSIONS

Lagoa Do Congro

14:00-15:45	Outreach, Education and Altimetric Data Services	Chairs: Jessica Hausman - Vinca Rosmorduc - Margaret Srinivasan
14:00-14:15	Latest Data Services at PO.DAAC <i>Jessica Hausman (JPL, United States)</i>	
14:15-14:30	ALES dataset in OpenADB <i>Marcello Passaro (DGFI-TUM, Germany), Ana Nuñez (DGFI-TUM, Germany), Christian Schwatke (DGFI-TUM, Germany), Gaia Piccioni (DGFI-TUM, Germany), Denise Dettmering (DGFI-TUM, Germany)</i>	
14:30-14:45	Enhancing oceanographic education and research in West Africa-the role of data availability <i>Ebenezer Nyadjro (University of New Orleans, United States), Brian Arbic (University of Michigan Ann Arbor, USA)</i>	
14:45-15:00	Visualisation and Analysis of Climate Data in the ESA CCI Toolbox <i>Ed Pechorro (ESA Climate Office, United Kingdom), Carsten Brockmann (Brockmann Consult GmbH, Germany), Norman Fomferra (Brockmann Consult GmbH, Germany), Susan Smollich (Brockmann Consult GmbH, Germany), Anna Corlyon (Telespazio Vega UK, United Kingdom), Jānis Gailis (Science [&] Technology Corporation (S[&]T), Norway), Rainer Hollmann (Deutscher Wetterdienst, Germany), Vivien Priemer (Deutscher Wetterdienst, Germany), Kevin John Pearson (University of Reading, United Kingdom), Frank Paul (University of Zurich, Switzerland), Paolo Cipollini (ESA Climate Office, United Kingdom), Catherine Downy (ESA Climate Office, United Kingdom), Paul Fisher (ESA Climate Office, United Kingdom)</i>	
15:00-15:15	NOAA's Adopt a Drifter Program <i>Emily Smith (NOAA/UCAR, United States)</i>	
15:15-15:30	Outreach & data services showcases <i>All (OSTST)</i>	
15:30-15:45	Discussion	

ORAL SESSIONS

Lagoa Das 7 Cidades

14:00-18:00 **Precision Orbit Determination** Chairs: Sean Bruinsma - Alexandre Couhert - Frank Lemoine

14:05-14:20 Jason-2/3 POD Status and First Results for Sentinel-3B

John Moyard (CNES, France), Eva Jalabert (CNES, France), Alexandre Couhert (CNES, France), Flavien Mercier (CNES, France), Sabine Houry (CNES, France), Hanane Ait Lakkir (CSSI, France), Clément Masson (CSSI, France)

14:20-14:35 Improved orbit time series for the TOPEX and Jason missions using SLR/DORIS data

Frank Lemoine (NASA GSFC, United States), Nikita Zelensky (SGT Inc., U.S.A), Alexandre Belli (NPP/USRA @ NASA GSFC, United States), Taylor Thomas (Emergent Space Technologies, United States), Brian Beckley (SGT Inc., United States), Douglas Chinn (SGT Inc., United States), Despina Pavlis (ESSIC, University of Maryland @ College Park, United States), Jean-Paul Boy (EOST/IPGS, University of Strasbourg, France)

14:35-14:50 GPS-Based Jason-2 and Jason-3 Precision Orbit Determination Solutions in the IGS14 Reference Frame

Shailen Desai (Jet Propulsion Laboratory, United States), Willy Bertiger (Jet Propulsion Laboratory, United States), Bruce Haines (Jet Propulsion Laboratory, United States), Da Kuang (Jet Propulsion Laboratory, United States), Aurore Sibois (Jet Propulsion Laboratory, United States)

14:50-15:05 Sentinel-3B - GPS L2C tracking tests during commissioning phase

Jaime Fernández (GMV, Spain), Heike Peter (PosiTim UG, Germany), Pierre Féménias (ESA/ESRIN, Italy)

15:05-15:20 Precise Orbit Determination status on Jason-2&3 and Sentinel-3A&B by CNES/CLS IDS Analysis Center

Hugues Capdeville (CLS, France), Jean-Michel Lemoine (CNES, France)

15:20-15:35 Short latency GPS orbit solutions for LEO satellites

Trilles Sébastien (Thales Alenia Space, France), Julie Anton (Thales Alenia Space, France), Halima Jmili (Thales Alenia Space, France), Sébastien Trilles (Thales Alenia Space, France), Thierry Authié (Thales Alenia Space, France), Flavien Mercier (CNES, France)

15:45-16:15 **Coffee break**

16:15-16:30 Integer Ambiguity resolved orbits for Sentinel-3A and Sentinel-3B

Michiel Otten (ESA/ESOC, Germany), Claudia Flohrer (ESA/ESOC, Germany), Tim Springer (ESA/ESOC, Germany), Werner Enderle (ESA/ESOC, Germany)

16:30-16:45 Fixed GPS ambiguity orbit solutions

Flavien Mercier (CNES, France), Clément Masson (CS-SI, France), Sabine Houry (CNES, France), Hanane Ait-Lakbir (CS-SI, France), Alexandre Couhert (CNES, France), Eva Jalabert (CNES, France), John Moyard (CNES, France)

16:45-17:00 On the effect of non-tidal atmospheric loading on altimetry orbits

Rolf Koenig (GFZ German Research Centre for Geosciences, Germany), Anton Reinhold (GFZ German Research Centre for Geosciences, Germany), Henryk Dobslaw (GFZ German Research Centre for Geosciences, Germany), Saskia Esselborn (GFZ German Research Centre for Geosciences, Germany), Karl Hans Neumayer (GFZ German Research Centre for Geosciences, Germany)

17:00-17:15 From satellite antenna Centers of Phase to the Center of the Earth: a study in improving the modeling of SLR/DORIS antenna phase centers and of the geocenter

Nikita Zelensky (SGT / GSFC, United States), Frank Lemoine (NASA/GSFC, United States), Brian Beckley (SGT/GSFC, United States), Alexandre Belli (NASA/GSFC, United States), Despina Pavlis (UMD / GSFC, United States), Douglas Chinn (SGT / GSFC, United States), Taylor Thomas (Emergent Space Technologies / GSFC, United States)

17:15-17:30 The new time-variable gravity field model for POD of altimetric satellites based on GRACE+SLR RL04 from CNES/GRGS

Jean-Michel Lemoine (CNES, France), Stéphane Bourgogne (Géode & Cie, France), Richard Biancale (CNES, France), Franck Reinquin (CNES, France)

17:30-17:45 Improved determination of the very low-degree Earth's gravity coefficients for satellite altimetry

Alexandre Couhert (CNES, France), Flavien Mercier (CNES, France), Richard Biancale (CNES, France), Christian Bizouard (Observatoire de Paris, SYRTE, France)

17:45-18:00 Discussion

ORAL SESSIONS

Lagoa Do Congro

16:15-18:00 **Quantifying Errors and Uncertainties in Altimetry data**

Chairs: Michael Ablain - Joel Dorandeu - Remko Scharroo

16:15-16:30 Assessment of the SARM processing sensitivity to swell

Matthias Raynal (CLS, France), Thomas Moreau (CLS, France), Ngan Tran (CLS, France), Sylvie Labroue (CLS, France), François Boy (CNES, France), Pierre Féménias (ESA/ESRIN, Italy), Franck Borde (ESA/ESTEC, Netherlands)

16:30-16:45 Random Error Estimation of Sentinel-3 and Jason-3 Wind and Wave Data: Initial Efforts

Saleh Abdalla (ECMWF, United Kingdom)

16:45-17:00 Impact of Geophysical Corrections on Altimetry Sea Level Estimations Near the Coast

Florence Birol (Université de Toulouse/Legos, France), Fernando Niño (Université de Toulouse/Legos, France), Fabien Léger (Université de Toulouse/Legos, France), Fabien Blarel (Université de Toulouse/Legos, France)

17:00-17:15 Aliased Tidal Variability in Mesoscale Sea Level Anomaly Maps

Edward Zaron (Portland State University, United States), Richard Ray (NASA/GSFC, United States)

17:15-17:30 Accounting for gravitational attraction and loading effects from land ice on altimeter data

Rui Ponte (AER, United States), Katherine Quinn (AER, United States), Christopher Piecuch (WHOI, United States)

17:30-17:45 Ocean mesoscale error reduction thanks to the new SAR/LR-RMC processing: new perspectives for DUACS

Yannice Faugere (CLS Space Oceanography Division, France), Marie-Isabelle Pujol (CLS, France), Oscar Vergara (Legos, France), Francois Boy (CNES, France), Thomas Moreau (CLS, France), Jeremie Aublanc (CLS, France), Gerald Dibarboure (CNES, France), Nicolas Picot (CNES, France)

17:45-18:00 Discussion

18:00 - 20:00 **Poster session 1 & Cocktail**

ORAL SESSIONS

Lagoa Das 7 Cidades

09:00-10:30 **Application Development for Operations** Chairs: Gerald Dibarboure - Gregg Jacobs - Carolina Nogueira Loddo - Joseph Sienkiewicz

09:00-09:15 Sentinel-3 and Jason-3 NRT Wind and Wave Products: Assessment and Assimilation

Saleh Abdalla (ECMWF, United Kingdom)

09:15-09:30 Significant Wave Height in the Subpolar Seas of the Arctic: Satellite Radar Altimeter Observations spanning Two Decades

Kyle Duncan (University of Maryland, United States), John Kuhn (NOAA, United States), Sinead Farrell (University of Maryland, United States)

- 09:30-09:45 Pathways, impacts and fate of marine debris generated by the 2011 tsunami in Japan, derived from a synthesis of numerical models and observational reports
Nikolai Maximenko (IPRC/SOEST, University of Hawaii, United States), Jan Hafner (IPRC/SOEST, University of Hawaii, United States), Masafumi Kamachi (Japan Agency for Marine-Earth Science and Technology, Japan), Amy MacFadyen (National Oceanic and Atmospheric Administration, United States)
- 09:45-10:00 New Level-3 and Level-4 near-real-time wave products derived from altimetry and SAR
Elodie Charles (CLS, France), Romain Husson (CLS, France), Nicolas Taburet (CLS, France), Alexis Mouche (IFREMER, France)
- 10:00-10:15 Near-Real Time monitoring of Water Surface Height for inland waters
Lionel Zawadzki (CLS, France), Jean-François Crétaux (LEGOS/CNES, France), Philippe Pacholczyk (CNES, France), Nicolas Taburet (CLS, France), Maxime Vayre (CLS, France), Rémi Jugier (CLS, France), Adrien Paris (CLS, France)
- 10:15-10:30 Discussion

ORAL SESSIONS

Teatro Auditorium

- 09:00-12:30 **Regional and Global CAL/VAL for Assembling a Climate Data Record** Chairs: Pascal Bonnefond - Shailen Desai - Bruce Haines - Eric Leuliette - Nicolas Picot
- 09:00-09:15 The Harvest Experiment: Updates from the Platform and Regional Campaigns
Bruce Haines (Jet Propulsion Laboratory, United States), Shailen Desai (Jet Propulsion Laboratory, California Institute of Technology, United States), Christian Meinig (NOAA Pacific Marine Environmental Laboratory, United States), Scott Stalin (NOAA Pacific Marine Environmental Laboratory, United States)
- 09:15-09:30 Absolute altimeter bias results from Bass Strait, Australia
Christopher Watson (University of Tasmania, Australia), Benoit Legresy (CSIRO, Australia), Jack Beardsley (Integrated Marine Observing System, Australia), Matt King (University of Tasmania, Australia)
- 09:30-09:45 Transponder and Sea-surface Calibration of Satellite altimeters at the Permanent Facility for Altimeter Calibration in west Crete, Greece
Stelios Mertikas (Technical University of Crete, Greece), Craig Donlon (European Space Agency, The Netherlands), Pierre Femenias (European Space Agency, Italy), Constantin Mavrocordatos (European Space Agency, The Netherlands), Demitris Galanakis (Space Geomatica P.C., Greece), Tommaso Parrinello (European Space Agency, Italy), Francois Boy (CNES, France), Ilias Tziavos (Aristotle University of Thessaloniki, Greece), George Vergos (Aristotle University of Thessaloniki, Greece), Xenofon Frantzis (Technical University of Crete, Greece), Achilles Tripolitsiotis (Space Geomatica P.C., Greece)

09:45-10:00 Corsica: A 20-Yr Multi-Mission Absolute Altimeter Calibration Site

Pascal Bonnefond (Observatoire de Paris - SYRTE, France), Olivier Laurain (OCA-Geoazur, France), Pierre Exertier (OCA-Geoazur, France), Thierry Guinle (CNES, France), Féménias Pierre (ESA/ESRIN, Italy)

10:00-10:15 Regional in situ CalVal of satellite altimeter range at non-dedicated sites

Mathilde Cancet (NOVELTIS, France), Pascal Bonnefond (OBSPM/SYRTE, France), Bruce Haines (JPL/NASA, USA), Christopher Watson (University of Tasmania, Australia), Florent Lyard (LEGOS/CNRS/OMP, France), Olivier Laurain (OCA/GEOAZUR, France), Pierre Féménias (ESA/ESRIN, Italy)

10:15-10:30 14 years of Absolute calibration of satellite altimeters on Lake Issykkul from GPS field campaigns

Jean-Francois Cretaux (CNES/LEgos, France), Muriel Berge-Nguyen (Legos/CNES, France), Stephane Calmant (Legos/IRD, France), Pascal Bonnefond (SYRTE, Observatoire de Paris, Université PSL, CNRS, Sorbonne Université, LNE, France), Nurzat Jamangulova (IWPH, Kyrgyzstan), Rysbek Satylkanov (IWPH, Kyrgyzstan), Florent Lyard (Legos/CNRS, France), Felix Perosanz (Get/CNES, France), Philippe Maisongrande (Legos/CNES, France)

10:30-11:00 **Coffee break**

11:00-11:15 Comparisons of Jason-3, Sentinel-3A, Sentinel-3B and tide gauges

Eric Leuliette (NOAA, United States), Amanda Plagge (NOAA/Global Science and Technology, Inc., United States)

11:15-11:30 Sentinel-3B commissioning: first results from the Level 2 Marine Products

Remko Scharroo (EUMETSAT, Germany), Cristina Martin-Puig (EUMETSAT, Germany), Carolina Nogueira Loddo (EUMETSAT, Germany), Bruno Lucas (HE Space Operations, Germany), Salvatore Dinardo (HE Space Operations, Germany)

11:30-11:45 Performance of the altimetry missions over coastal areas through sea level measurements

Hélène Roinard (CLS, France), Matthias Raynal (CLS, France), Ghita Jettou (CLS, France), Nicolas Picot (CNES, France), Pierre Femenias (ESA, Italy)

11:45-12:00 Evaluating Sentinel-3 SRAL performance near the coast of southwest England

Francesco Nencioli (Plymouth Marine Laboratory, United Kingdom), Graham Quartly (Plymouth Marine Laboratory, United Kingdom), Daniel Conley (University of Plymouth, United Kingdom), Wei Zhang (University of Plymouth, United Kingdom)

12:00-12:15 Quality Assessment of Altimetry Water Surface Height Measurements for inland waters

Lionel Zawadzki (CLS, France), Nicolas Taburet (CLS, France), Adrien Paris (CLS, France), Maxime Vayre (CLS, France), Rémi Jugier (CLS, France), Matthias Raynal (CLS, France), Denis Blumstein (LEGOS/CNES, France), Sophie Le Gac (CNES, France), Jean-François Crétaux (LEGOS/CNES, France), Nicolas Picot (CNES, France)

12:15-12:30 Discussion

ORAL SESSIONS

Lagoa Do Congro

09:00-10:30 **The Geoid, Mean Sea Surfaces and Mean Dynamic Topography** Chairs: Ole B. Andersen - Yannice Faugere

09:00-09:15 Analysis of Geomed2 Combined Geoid Models

Sean Bruinsma (CNES, France)

09:15-09:30 First marine gravity field result from Jason-2 Long Repeat Orbit mission

Ole Baltazar Andersen (DTU Space, Denmark), Walter Smith (NOAA, USA), David Sandwell (SIO, USA), Gerald Dibarboure (CNES, France), Hugh Harper (SIO, USA), Alejandro Egido (NOAA, USA), Adili Abulaitijiang (DTU Space, Denmark)

09:30-09:45 What do we need to improve the next Mean Sea Surface?

Philippe Schaeffer (CLS, France), Isabelle Pujol (CLS, France), Elodie Charles (CLS, France), David Sandwell (SIO, USA), Antoine Delepouille (CLS, FRANCE), Yannice Faugere (CLS, France), Nicolas Picot (CNES, FRANCE), Gerald Dibarboure (CNES, FRANCE)

09:45-10:00 The DTU17 OGMOC mean dynamic topography model – DTU17MDT

Per Knudsen (Professor, Denmark), Ole Andersen (Dr, Denmark), Thomas Fecher (Professor, Denmark), Nikolai Maximenko (Univ Hawaii, USA)

10:00-10:15 New CNES-CLS Mean Dynamic Topography of the global ocean from altimetry, gravity and in-situ data

Marie-Hélène Rio (CLS, France), Sandrine Mulet (CLS, FRANCE), Nicolas Picot (CNES, FRANCE), Gérald Dibarboure (CNES, FRANCE)

10:15-10:30 Discussion

ORAL SESSIONS

Lagoa Das 7 Cidades

11:00-12:30 **Instrument Processing: Propagation, Wind Speed and Sea State Bias** Chairs: Shannon Brown - Estelle Obligis

11:00-11:15 A first assessment of Sentinel-3B Microwave Radiometer: intercalibration and performance

Marie-Laure Frery (CLS, France), Mathilde Siméon (CLS, france), Christophe Goldstein (CNES, france), Franck Borde (ESA, Netherlands), Pierre Féménias (ESA, Italy)

11:15-11:30 A new synergistic radiometer/altimeter instrument processing algorithm

Tanvir Islam (NASA JPL, United States), Shannon Brown (NASA JPL, USA), Sidharth Misra (NASA JPL, USA)

11:30-11:45 Using radiosonde networks to assess short scale Wet Tropospheric Correction retrieval improvement: illustration with SARAL/AltiKa mission

Marie-Laure Frery (CLS, France), Bruno Picard (CLS, France), Christophe Goldstein (CNES, France)

11:45-12:00 Improvements on Jason-3 and Sentinel-3 Sea State Bias models using a synergistic approach with SAR Sentinel-1 ocean products

Nelson Pires (University of Porto, Portugal), M. Joana Fernandes (University of Porto, Portugal), Christine Gommenginger (National Oceanography Centre, United Kingdom), Remko Scharroo (EUMETSAT, Germany)

12:00-12:15 Improving the precision of sea level data from satellite altimetry with high-frequency and regional Sea State Bias corrections

Marcello Passaro (DGFI-TUM, Germany), Zulfikar Adlan Nadzir (DGFI-TUM and Sumatera Institute of Technology (Itera), Germany-Indonesia), Graham D Quartly (Plymouth Marine Laboratory, UK)

12:15-12:30 Discussion

ORAL SESSIONS

Lagoa Do Congro

11:00-12:30 **Tides, internal tides and high-frequency processes**

Chairs: Loren Carrere - Florent Lyard, Richard Ray

11:00-11:12 The non-stationarity scattering rate: a new metric to study non-stationary internal tides

Maarten Buijsman (University of Southern Mississippi, United States), Jay Shriver (Naval Research Laboratory, USA), Brian Arbic (University of Michigan, USA), James Richman (Florida State University, USA)

11:13-11:25 Bathymetry improvement and tidal modeling at regional scales in the NEA and in Indonesia

Mathilde Cancet (NOVELTIS, France), Florence Toublanc (NOVELTIS, France), Florent Lyard (LEGOS/CNRS/OMP, France), Gérald Dibarboure (CNES, France), Nicolas Picot (CNES, France), Thierry Guinle (CNES, France)

11:26-11:38 Simultaneous Estimation of Tides and Topography in the Weddell Sea

Edward Zaron (Portland State University, United States)

11:39-11:51 Progress and challenges of the Dynamic Atmospheric Correction for altimetry over last 25 years

Loren Carrere (CLS, France), Damien Allain (CLS, LEGOS, FRANCE), Florent Lyard (LEGOS, FRANCE), Yannice Faugère (CLS, FRANCE), Romain Baghi (CLS, FRANCE), Jean-Michel Lachiver (CNES, FRANCE)

11:52-12:04 Impact of waves on storm surges in the North Sea: model evaluation against altimeter

Lucia Pineau-Guillou (Ifremer/LOPS, France), Marie-Noëlle Bouin (Meteo-France/LOPS, France), Fabrice Ardhuin (CNRS/LOPS, France), Florent Lyard (CNRS/LEGOS, France)

11:13-11:25 Numerical modelling of non-tidal ocean dynamics for the reduction of spatio-temporal aliasing in global grids of sea-level anomalies from radar altimetry
Henryk Dobslaw (Deutsches GeoForschungsZentrum, Germany), Saskia Esselborn (GFZ Potsdam, Germany)

12:17-12:30 Discussion

12:30-14:00 **Lunch**

14:00 - 15:00 **Poster session 2**

15:00-15:30 **Coffee break**

ORAL SESSIONS

Teatro Auditorium

15:30-18:00 **OSTST Closing Plenary Session** **Chairs: Pascal Bonnefond - Craig Donlon - Eric Leuliette - Remko Scharroo - Josh Willis**

15:30-17:10 Splinters meeting summaries

15:30-15:40 Application development for Operations summary

15:40-15:50 Instrument processing (Propagation, Wind Speed and Sea State Bias) summary

15:50-16:00 Instrument processing (Measurement and retracking) summary

16:00-16:10 Outreach, Education & Altimetric data services summary

16:10-16:20 Precision Orbit Determination summary

16:20-16:30 Quantifying Errors and Uncertainties in Altimetry Data summary

16:30-16:40 Regional and Global CAL/VAL for Assembling a Climate Data Record summary

16:40-16:50 The Geoid Mean Sea Surfaces and Mean Dynamic Topography summary

16:50-17:00 Tides, internal tides and high-frequency processes summary

17:00-17:10 11th Coastal Altimetry Workshop summary

Paolo Cipollini (Telespazio VEGA/ECSAT, United Kingdom)

17:10-17:20 Jason/GDR status and plans

Nicolas Picot (CNES, France)

17:20-18:00 Discussion, summary and recommendation

Thursday, September 27 2018, 18:00-20:00

Friday, September 28 2018, 14:00-15:00

Foyer, Salao Nobre & tent

Instrument Processing: Measurement and Retracking

Chairs: Francois Boy - Phil Callahan - Robert Cullen -
Jean-Damien Desjonqueres - Alejandro Egido - Cristina
Martin-Puig - Walter H.F. Smith

- IPM_001** S6 P4 GPP: Fully Focused Delay-Doppler Processing applied on RAW and RMC data- Preliminary results
Eduard Makhoul (isardSAT), Mònica Roca (isardSAT), Roger Escola (isardSAT), Albert Garcia-Mondéjar (isardSAT), Gorka Moyano (isardSAT), Pablo Garcia (isardSAT), Marco Fornari (RHEA/ESTEC), Mieke Kuschnerus (ESTEC/ESA), Robert Cullen (ESTEC/ESA)
- IPM_002** A trade-off analysis of Fully Focused SAR processing algorithms for high PRF altimeters
Michele Scagliola (Aresys), Pietro Guccione (Politecnico di Bari)
- IPM_003** Can fully-focused or unfocused SAR delay doppler altimeter range data provide enhanced detection of coastal currents?
Hui Feng (University of New Hampshire), Alejandro Egido (NOAA – Laboratory for Satellite Altimetry), Doug Vandemark (University of New Hampshire), Claire Dufau (CLS Space Oceanography, Toulouse)
- IPM_004** Impact of the Sentinel-3 SRAL PTR Width Drift on the L2 Marine Measurement
Salvatore Dinardo (HE SPACE), Remko Scharroo (EUMETSAT), Cristina Martin-Puig (EUMETSAT), Bruno Lucas (HE SPACE), Carolina Loddo (EUMETSAT)
- IPM_005** Sea State Climate Change Initiative: first steps of the Algorithm Development Team
Marcello Passaro (DGFI-TUM), Graham D Quartly (Plymouth Marine Laboratory), Yves Quilfen (Ifremer), Monica Roca (Isardsat), Pierre Thibaut (CLS), Fabrice Arduin (Laboratoire d'Océanographie Physique et Spatiale (LOPS), Univ. Brest, CNRS, Ifremer), Craig Donlon (European Space Agency ESTEC/EOP-SME), Paolo Cipollini (Telespazio VEGA UK for ESA Climate Office ECSAT), Ellis Ash (Satellite Oceanographic Consultants)
- IPM_006** Performance of ICE-1 vs ICE-3 in retrieving water levels over rivers with Jason-2
Taina Conchy (UEA), Adrien Paris (CLS), Stéphane Calmant (IRD), Joécila Santos da Silva (UEA)
- IPM_007** Validation of 400+ SARAL (ICE-1) water level series over rivers
Joécila Santos da Silva (UEA), Daniel Medeiros Moreira (CPRM), Taina Conchy (UEA), Stéphane Calmant (IRD), Adrien Paris (CLS)
- IPM_008** Evaluation of retracker bias due to waveform fitting method
Chris Ray (Saint Mary's College of California/isardSAT), Monica Roca (isardSAT), Eduard Makhoul Varona (isardSAT)

IPM_009 Reprocessing of the Poseidon-1 French Altimeter

Pierre Thibaut (CLS), H  l  ne Roinard (Collecte Localisation Satellite), Nicolas Picot (CNES), Thierry Guinle (CNES)

IPM_010 Calibration Data for Retracking TOPEX Data

Philip Callahan (Jet Propulsion Laboratory), Jean-Damien Desjonqueres (Jet Propulsion Laboratory), Shailen Desai (Jet Propulsion Laboratory), Matthieu Talpe (Jet Propulsion Laboratory), Joshua Willis (Jet Propulsion Laboratory)

Outreach, Education and Altimetric Data Services

Chairs: Jessica Hausman - Vinca Rosmorduc - Margaret Srinivasan

ODS_001 NOAA Scientific Data Stewardship for Ocean Surface Topography Mission (OSTM)/Jason-2 and Jason-3 Products

Yongsheng Zhang (NCEI/NESDIS/NOAA), Xuepeng Zhao (NCEI/NESDIS/NOAA), huai-min Zhang (NCEI/NESDIS/NOAA)

ODS_002 CLASH Capteurs de Lyc  ens pour la calval d'un satellite Hydrom  trique

Martine Bousquet (lyc  e charles de gaulle), Stephane Calmant (LEGOS-CNRS)

ODS_003 Overview of New "Jason-Series Missions Applications Program"

Annette deCharon (ODYSEA LLC), Leslie Smith (Your Ocean Consulting LLC), Margaret Srinivasan (Jet Propulsion Laboratory)

ODS_004 Access to Sentinel-3 Marine Center data

Bruno Lucas (HE Space/EUMETSAT), Remko Scharroo (EUMETSAT), Carolina Nogueira Lodo (EUMETSAT), Cristina Martin-Puig (EUMETSAT), Salvatore Dinardo (HE Space/EUMETSAT), Vincenzo Santacesaria (EUMETSAT), Melad Nassar (CS/EUMETSAT), Iliaria Parodi (SCISYS/EUMETSAT)

ODS_005 CTOH altimetry products (L1 to L4) for ocean, ice and continental surfaces applications

Sara Fleury (LEGOS/CTOH), Florence Birol (LEGOS/CTOH), Fabien Blarel (LEGOS/CTOH), Denis Blumstein (LEGOS/CNES), Fr  d  ric Frappart (LEGOS/CTOH), K  vin Guerreiro (LEGOS/CTOH), Fabien L  ger (LEGOS/CTOH), Rosemary Morrow (LEGOS/CTOH), Fernando Ni  o (LEGOS/CTOH)

ODS_006 Goodbye FTP, How to Access Data at PO.DAAC

Jessica Hausman (JPL)

Precision Orbit Determination

Chairs: Sean Bruinsma - Alexandre Couhert - Frank Lemoine

POD_001 On the long-term stability of altimetry satellites orbits

Sergei Rudenko (DGFI-TUM), Denise Dettmering (DGFI-TUM), Mathis Bloßfeld (DGFI-TUM), Saskia Esselborn (GFZ), Tilo Schöne (GFZ)

POD_002 Assessment of Orbit Quality through the SSH calculation Towards GDR-F orbit standards

Annabelle Ollivier (CLS), Maeva Dalila (CLS), Alexandre Couhert (CNES), Nicolas Picot (CNES)

Quantifying Errors and Uncertainties in Altimetry data

Chairs: Michael Ablain - Joel Dorandeu - Remko Scharroo

ERR_001 Inherent uncertainties within altimetric Global Mean Sea Level time series

Martin Scharffenberg (CEN - University of Hamburg), Detlef Stammer (CEN - University of Hamburg)

ERR_002 Estimating Trend and Acceleration Uncertainties of Global Mean Sea Level Evolution over the 25-Year Altimetry Era

Michael Ablain (CLS), Lionel Zawadzki (CLS), Rémi Jugier (CLS), Benoît Meyssignac (LEGOS), Anny Cazenave (LEGOS), Nicolas Picot (CNES)

ERR_003 Estimating altimetry Mean Sea Level trend uncertainties in coastal areas

Lionel Zawadzki (CLS), Rémi Jugier (CLS), Michaël Ablain (CLS), Florence Birol (LEGOS), Benoît Meyssignac (LEGOS), Anny Cazenave (LEGOS)

ERR_004 On the resolution of ocean altimetry maps

Maxime Ballarotta (CLS), Clement Ubelmann (CLS), Marie-Isabelle Pujol (CLS), Guillaume Taburet (CLS), Florent Fournier (CLS), Jean-Francois Legeais (CLS), Yannice Faugère (CLS), Antoine Delepouille (CLS), Dudley Chelton (Oregon State University), Gerald Dibarboure (CNES), Nicolas Picot (CNES)

ERR_005 Altimetric wavenumber spectra: noise floors and resolution capability

Oscar Vergara (LEGOS/CNRS), Rosemary Morrow (LEGOS), Isabelle Pujol (CLS Space Oceanography), Gerald Dibarboure (CNES), Clement Ubelmann (CLS Space Oceanography)

ERR_006 Error and Uncertainties in Wideband Signals of Opportunity (SoOp) Altimetry

Soon Chye Ho (Purdue University), Rashmi Shah (Jet Propulsion Lab), James L. Garrison (Purdue University), Zhijin Li (Jet Propulsion Lab)

ERR_007 How Sentinel-3 tandem phase contributes to Sentinel-3 error budget

Sylvie Labroue (CLS), Matthias Raynal (CLS), Pierre Féménias (ESA), François Boy (CNES), Franck Borde (ESA)

ERR_008 Validation of Icesat Measurements over the Amazon River

Daniel Medeiros Moreira (CPRM), Stéphane Calmant (LEGOS/IRD), Félix Perosanz (GET/CNES), Jean-François Cretaux (LEGOS/CNES), Adrien Paris (CLS), Joécila Santos da Silva (UEA), Frédérique Seyler (Espace/IRD), Otto Rotunno Filho (UFRJ)

ERR_009 Uncertainty Characterization with FRM Standards for Satellite Altimetry Calibration: Lessons from the past and roadmap to the future

Stelios Mertikas (Technical University of Crete), Craig Donlon (European Space Agency/ESTEC), Pierre Féménias (European Space Agency/ESRIN), Demetris Galanakis (Space Geomatica P.C.), Xenophon Fratzis (Technical University of Crete), Achilles Tripolitsiotis (Space Geomatica P.C.)

Application Development for Operations

**Chairs: Gerald Dibarboure - Gregg Jacobs -
Carolina Nogueira Loddo - Joseph Sienkiewicz**

APOP_001 On the assimilation of high frequency altimeters wave data in coastal wave model

Lotfi Aouf (Division Marine et Océanographie Météo-France), Alice Dalphinet (Meteo-France), Sergei Badulin (Shirshov Institute of Oceanography)

APOP_002 On the update of swell dependency for SAR mode altimetry of Sentinel-3

Lotfi Aouf (Division Marine et Océanographie Météo-France), Alice Dalphinet (Meteo-France)

APOP_003 A new 25 year mesoscale eddy trajectory atlas on AVISO

Antoine Delepouille (cls), Yannice Faugere (cls), Dudley Chelton (OSU)

APOP_004 Ocean meso scale in the Copernicus Marine Environment Monitoring Service global ocean eddy-resolving physical analysis, forecasting and reanalysis

Yann Drillet (Mercator Océan), Jean-Michel Lellouche (Mercator Océan), Romain Bourdallé-Badie (Mercator Océan), Olivier Le Galloudec (Mercator Océan), Eric Greiner (CLS), Gilles Garric (Mercator Océan), Charly Regnier (Mercator Océan), Marie Drevillon (Mercator Océan), Clement Bricaud (Mercator Océan)

APOP_005 An interactive website for enhancing the Open-Loop Tracking Command (DLTC) of conventional altimeters for inland waters observation

Sophie Le Gac (CNES), François Boy (CNES), Nicolas Picot (CNES), Denis Blumstein (LEGOS/Univ. Toulouse/CNES/CNRS/IRD), Sylvain Biancamaria (LEGOS/Univ. Toulouse/CNES/CNRS/IRD), Jean-François Crétaux (LEGOS/Univ. Toulouse/CNES/CNRS/IRD), Stéphane Calmant (LEGOS/Univ. Toulouse/CNES/CNRS/IRD), Manon Verdier (NOVELTIS), Franck Borde (ESA/ESTEC), Pierre Féménias (ESA/ESRIN)

APOP_006 4DVAR Assimilation of simulated wide-swath altimeter data into a high resolution ocean model

Hans Ngodock (NRL), Matthew Carrier (NRL), Scott Smith (NRL)

- APOP_007** Value added Sentinel-3A sea level products by the Marine Altimetry L2P-L3 Service available since June 2017
Sabine Philipps (CLS), Isabelino Denis (CNES), Marine Lievin (CLS), Marie-Isabelle Pujol (CLS), Michael Ablain (CLS), Carolina Nogueira Loddo (EUMETSAT)
- APOP_008** Satellite altimeter combined measurements and local persistent small-scale ocean-atmosphere signatures
Yves Quilfen (LOPS/IFREMER), Bertrand Chapron (LOPS/IFREMER)
- APOP_009** Jason-2 and Jason-3 Near-Real Time Products Latency over the Past Year
Donald Richardson (Columbus Technology), David Donahue (NOAA)

Regional and Global CAL/VAL for Assembling a Climate Data Record

Chairs: Pascal Bonnefond - Shailen Desai - Bruce Haines - Eric Leuliette - Nicolas Picot

- CVL_001** The progress and outlook of the international cooperation program on satellite altimeter calibration between China-Greece
Xinghua Zhou (First Institute of Oceanography, State Oceanic Administration, Qingdao), Lei Yang (First Institute of Oceanography, State Oceanic Administration, Qingdao)
- CVL_002** Calibration results of multiple satellite altimetry missions from Qianliyan permanent Cal/Val facilities
Lei Yang (First Institute of Oceanography, State Oceanic Administration, Qingdao), Xinghua Zhou (First Institute of Oceanography, State Oceanic Administration, Qingdao)
- CVL_003** A new inverted echo sounder for satellite altimetry calibration and validation
Benoit Legresy (Climate Science Centre, CSIRO Oceans and Atmosphere, Hobart, Tasmania, Australia), Christopher Watson (School of Technology, Environments and Design, University of Tasmania, Hobart, Tasmania, Australia)
- CVL_004** Assessment of optimal coastal altimetric corrections in a flat coastal environment around the Aix island sea-level observatory, France
Laurent Testut (LIENSs/LEGOS), Maryia Velikova (LIENSs), Valérie Ballu (LIENSs), Pascal Bonnefond (Observatoire de Paris / SYRTE), Olivier Laurain (OCA/Géoazur), Xavier Bertin (LIENSs)
- CVL_005** In situ calibration of satellite altimetric missions at the German Bight and Baltic Sea coasts
Luciana Fenoglio (University of Bonn), Bernd Uebbing (University of Bonn), Salvatore Dinardo (Eumetsat), Christopher Buchhaupt (Darmstadt Technical University), Remko Scharroo (Eumetsat), Jürgen Kusche (University of Bonn), Joanna Staneva (Helmholtz-Zentrum Geesthacht), Matthias Becker (Darmstadt Technical University), Jerome Benveniste (ESA/ESRIN)

CVL_006 The performance of satellite altimetry currents in a wide continental shelf

Loreley Lago (INIDEP), Martin Saraceno (Centro de Investigaciones del Mar y la Atmósfera (CIMA) CONICET/UBA), Patricia Martos (INIDEP), Raul Guerrero (INIDEP), Alberto Piola (Departamento de Oceanografía, Servicio de Hidrografía Naval (SHN)), Christine Provost (Laboratoire d'Océanographie et du Climat: Experimentation et Approches Numériques), Guillermina Paniagua (Centro de Investigaciones del Mar y la Atmósfera (CIMA) CONICET/UBA), Ramiro Ferrari (Centro de Investigaciones del Mar y la Atmósfera (CIMA) CONICET/UBA), Camila Artana (Laboratoire d'Océanographie et du Climat: Experimentation et Approches Numériques)

CVL_007 Cal/Val activities of satellite altimetry for Hydrology in Brazil

Daniel Moreira (CPRM- Geological Survey of Brazil), Stéphane Calmant (IRD/LEGOS), Felix Perosanz (CNES/GRGS), Jean-François Cretaux (CNES/LEGOS), Joecila Silva (UEA), Adrien Paris (CLS), Otto Rotunno Filho (COPPE/UFRJ), Pierre-André Garambois (INSA), Bernardo Oliveira (CPRM- Geological Survey of Brazil), Fábio Costa (CPRM- Geological Survey of Brazil)

CVL_008 Evolution of the performances of radar altimetry missions from ERS-2 to Sentinel-3A over : the example of the Inner Niger Delta

Cassandra Normandin (UMR CNRS 5805 EPOC), Frédéric Frappart (GET/OMP/LEGOS), Adama Telly Diepkilé (DER Math-Informatique), Vincent Marieu (EPOC, UMR 5805), Eric Mougin (GET), Fabien Blarel (LEGOS), Bertrand Lubac (EPOC, UMR 5805), Nadine Braquet (IRSTEA/IRD), Abdramane Ba (LOSSA)

CVL_009 Relative range bias drifts revealed by a multi-mission crossover analysis: from TOPEX to Sentinel-3

Denise Dettmering (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München (DGFI-TUM)), Christian Schwatke (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München (DGFI-TUM))

CVL_010 Monitoring Jason-3 sea surface height measurement stability for global and regional sea level estimates

Brian Beckley (SGT Inc./NASA GSFC), Xu Yang (SGT Inc.), Gary Mitchum (University of South Florida), Richard Ray (NASA GSFC), Frank Lemoine (NASA GSFC), Nikita Zelensky (SGT Inc.), Bryant Loomis (NASA GSFC)

CVL_011 A new CAL/VAL proposition based on the sea level budget in the center of mass

Alejandro Blazquez (LEGOS-CNES), Benoit Meyssignac (LEGOS/CNES), Jean Michel Lemoine (CNES), Alexandre Couhert (CNES), Flavien Mercier (CNES)

CVL_012 Jason-3 and Jason-2 mission performance

Hélène Roinard (CLS), Sabine PHILIPPS (CLS), Nicolas PICOT (CNES)

CVL_010 Results from Inter-Satellite and Independent Calibration and Validation for Jason-3

Jean-Damien Desjonqueres (NASA Jet Propulsion Laboratory), Matthieu Talpe (NASA Jet Propulsion Laboratory), Shailen Desai (NASA Jet Propulsion Laboratory), Bruce Haines (NASA Jet Propulsion Laboratory), Rashmi Shah (NASA Jet Propulsion Laboratory)

CVL_014	Calibration and Validation of Jason-2 over the First Full Cycle of the Long-Repeat Orbit <i>Matthieu Talpe (Jet Propulsion Laboratory), Jean-Damien Desjonqueres (Jet Propulsion Laboratory), Shailen Desai (Jet Propulsion Laboratory), Bruce Haines (Jet Propulsion Laboratory)</i>
CVL_015	Calibration and Validation of Reprocessed TOPEX Geophysical Data Records <i>Shailen Desai (Jet Propulsion Laboratory), Philip Callahan (Jet Propulsion Laboratory), Jean-Damien Desjonqueres (Jet Propulsion Laboratory), Bruce Haines (Jet Propulsion Laboratory), Matthieu Talpe (Jet Propulsion Laboratory), Joshua Willis (Jet Propulsion Laboratory), Glenn Shirliff (Jet Propulsion Laboratory), Nicolas Picot (Centre Nationale des Etudes Spatiales), Thierry Guinle (Centre Nationale des Etudes Spatiales), Helene Roinard (Collecte Localisation Satellites), Michael Ablain (Collecte Localisation Satellites)</i>
CVL_016	Global Ocean Data Quality Assessment of SARAL/AltiKa <i>GHITA JETTOU (CLS)</i>
CVL_017	Sentinel-3A mission : a high quality data set for altimetry over ocean <i>Matthias Raynal (CLS), Sylvie Labroue (CLS), Pierre Féménias (ESA/ESRIN), Scharoo Remko (EUMETSAT)</i>
CVL_018	A new altimetry data validation approach based on Data Mining and Machine learning techniques <i>Romain Bergougnoux (NOVELTIS), Sophie Le Gac (CNES), Charlotte Garcia (CNES), Eric Jeansou (NOVELTIS), Mathilde Cancet (NOVELTIS), Florence Toubanc (NOVELTIS), Sylvain Brunato (NOVELTIS)</i>

The Geoid, Mean Sea Surfaces and Mean Dynamic Topography

Chairs: Ole B. Andersen - Yannice Faugere

GEO_001	The DTU18 MSS Mean Sea Surface – Technical description <i>Ole Baltazar Andersen (Dr), Per Knudsen (DTU Space-Denmark), Lars Stenseng (DTU Space)</i>
GEO_002	Evaluation of two years of Sentinel-3A and first Sentinel-3B and impact of and on Mean Sea Surfaces and ocean tide corrections <i>Ole Baltazar Andersen (Dr), Heidi Randall (Dr)</i>
GEO_003	Improvements and limitations of recent mean sea surface models: importance for Sentinel-3 and SWOT <i>Marie Isabelle Pujol (CLS), Philippe Schaeffer (CLS), Yannice Faugère (CLS), François-Xavier Davanne (CLS), Gerald Dibarbouré (CNES), Nicolas Picot (CNES)</i>

Instrument Processing: Propagation, Wind Speed and Sea State Bias

Chairs: Shannon Brown - Estelle Obligis

IPC_001 Progress in the Wet Tropospheric Correction for Altimetry: Jason-3 to Sentinel-6 and Beyond

Shannon Brown (JPL), Tanvir Islam (JPL)

IPC_002 A Wet Tropospheric Correction for Global Mean Sea Level application computed from CM SAF FCDR Microwave Imager Radiances

Bruno Picard (CLS), Mickaël Ablain (CLS), Benoît Meyssignac (LEGOS), Rémy Roca (LEGOS)

IPC_003 Improving the continuity of the Jason SSB time-series

Ngan Tran (CLS), Gérald Dibarboure (CNES), Nicolas Picot (CNES)

IPC_004 Modelling the height dependence of the wet path delay using ERA5 model-level fields

Telmo Vieira (University of Porto, Faculty of Sciences), M. Joana Fernandes (University of Porto, Faculty of Sciences), Clara Lázaro (University of Porto, Faculty of Sciences)

IPC_005 Characteristics of atmospheric attenuation events for Ka-band altimetry

Bruno Picard (CLS), Marie-Laure Frery (CLS), Nicolas Picot (CNES), Gérald Dibarboure (CNES), Nathalie Steunou (CNES)

Tides, internal tides and high-frequency processes

Chairs: Loren Carrere - Florent Lyard - Richard Ray

TID_001 Unstructured Ocean Loading Atlas

Damien Allain (OMP/LEGOS), Pascal Gégout (GET - CNRS), Jean-Paul Boy (EOST-IPGS), Florent Lyard (LEGOS - CNRS)

TID_002 A validation of FES2014 tidal currents using High Frequency Radars data on the US East Coast

Loren Carrere (CLS), Florianne Saily (CLS), Florent Lyard (LEGOS)

TID_003 Turning on the tides in the global CMEMS ocean model: sensitivity to numerical choices

Romain Bourdalle-Badie (mercator ocean), Jerome Chanut (mercator ocean), Loren Carrere (CLS), Florent Lyard (Legos), Benoît Tranchant (CLS), Yann Drillet (mercator ocean)

TID_004 An updated EOT model: first impressions from the North Sea

Gaia Piccioni (DGFI-TUM), Denise Dettmering (DGFI-TUM), Christian Schwatke (DGFI-TUM), Wolfgang Bosch (DGFI-TUM), Florian Seitz (DGFI-TUM)

TID_005 A new set of in-situ tidal constants based on the GESLA dataset

Gaia Piccioni (DGFI-TUM), Denise Dettmering (DGFI-TUM), Wolfgang Bosch (DGFI-TUM), Florian Seitz (DGFI-TUM)

TID_006 Tidal analysis of Cryosat-2 data over ice-free regions of the Arctic Ocean

Richard Ray (NASA/GSFC)

TID_007 The mode-2 M2 internal tide

Zhongxiang Zhao (University of Washington)

Others (poster only)

**Chairs: Pascal Bonnefond - Craig Donlon - Eric Leuliette -
Remko Scharroo - Josh Willis**

OTH_001 A SAR altimetry End-to-End simulation and processing chain

Michele Scagliola (Aresys), Luca Maestri (Aresys), Lisa Recchia (Aresys), Davide Giudici (Aresys)

OTH_002 Sentinel-6 altimeter Level-2 Ground Prototype Processor

Thomas Moreau (CLS), Sébastien Figerou (CLS), Thomas Fogue (CLS), Jérémie Aublanc (CLS), Marco Fornari (ESA), Mieke Kuschnerus (ESA), Robert Cullen (ESA), François Boy (CNES), Gilles Tavernier (CNES), Gerard Zouche (CNES)

OTH_003 Linking Sea Surface Height Variations with Hydrographic Variability around the Greenland Ice Sheet to Improve Understanding of Sea Level Rise

Ian Fenty (JPL), Steve Nerem (Colorado Center for Astrodynamics Research)

OTH_004 Performance of Sentinel-3A for the Observation of Water Level Variations of Rivers and Lakes

Eva Boergens (DGFI-TUM), Christian Schwatke (DGFI-TUM), Denise Dettmering (DGFI-TUM)

OTH_005 Analysis of TC's wake with multisensors observations and analytical model

Clément Combet (IFREMER), Yves Quilfen (IFREMER), Bertrand Chapron (IFREMER), Alexis Mouche (IFREMER)

OTH_006 Analyzing Oceanic Turbulence Using Structure Functions and Advanced Turbulence Theories via Satellite Altimetry

Boris Galperin (University of South Florida)

OTH_007 On the zonal wavenumber-frequency spectra of SSH

Uriel Zajaczkovski (Woods Hole Oceanographic Institution), J. Thomas Farrar (Woods Hole Oceanographic Institution), Steven R. Jayne (Woods Hole Oceanographic Institution), Theodore S. Durland (Oregon State University)

- OTH_008** **Satellite altimetry and current-meter velocities in the Malvinas Current: Volume transport and modes of variations at 44.7°S.**
Ramiro Ferrari (Centro de Investigaciones del Mar y la Atmósfera.), Martin Saraceno (Centro de Investigaciones del Mar y la Atmósfera.), Guillermina F. Paniagua (Centro de Investigaciones del Mar y la Atmósfera.), Christine Provost (LOCEAN)
- OTH_009** **Optimal SSH Mapping for Eddies and Mesoscale Currents**
Kathleen Dohan (Earth and Space Research), Jonathan Lilly (NorthWest Research Associates)
- OTH_010** **Coastally trapped intra-seasonal waves along African coasts: an attempt to estimate their thermal impacts**
Alban Lazar (LOCEAN-IPSL-UPMC), Sane Badara (LPAOSF-ESP-UCAD), Malick Wade (LSAO, UGB), Léa Poli (LOCEAN-IPSL-UPMC)
- OTH_011** **Estimation of vertical velocities associated with large scale dynamics in the Atlantic ocean**
Alban Lazar (LOCEAN-IPSL, Sorbonne Université), Magnim Gnamah (LOCEAN-IPSL, Sorbonne Université), Siny Ndoye (LPAOSF-ESP-UCAD)
- OTH_012** **Investigating the efficiency of satellite altimetry to reproduce water levels variability in various coastal regions**
Edward Salameh (LEGOS), Antoine Soloy (jet propulsion laboratory), Frédéric Frappart (Observatoire Midi Pyrénées), Imen Turki (Morphodynamique Continentale et Côtière (M2C)), Benoit Laignel (Morphodynamique Continentale et Côtière (M2C))

