Swarm 11th DQW Agenda

11 - 15 October 2021, Athens, Greece

Day 1   Monday 11/10/2021

All the talks and events are scheduled in Greek Local Time (CEST+1hour)

Start	End	Event	
09:00	10:45	**Registration**	
10:45	11:00	**Welcome by** **Professor Athanasios Kyriazis, Secretary General for Research and Innovation** **Dr. Spyros Basilakos, Director of IAASARS & Vice President of the National Observatory of Athens** **Dr. George Balasis, Local Organising Committee**	
		Session 1: Mission overview	**Chairs:Anja Stromme & Jerome Bouffard**
11:00	11:15	Swarm mission status	Anja Stromme
11:15	11:30	Swarm and beyond - exploring Earth's magnetic field from Space using ESA's satellite trio and a fleet of other satellites	Nils Olsen
11:30	11:45	Flight Operations Segment Status	Ignacio Clerigo
11:45	12:00	Constellation status of the Swarm mission	Detlef Sieg
12:00	12:15	Swarm-E Operations Status and New Data Products	Andrew Howarth*
12:15	**12:45**	**Swarm Constellation Evolution - Discussion**	
12:45	**14:30**	**Lunch**	
		Session 2: Magnetic field measurements	**Chairs: Nicola Comparetti / Jan Miedzik**
14:30	14:45	Magnetic package instruments and processors	Nicola Comparetti
14:45	15:00	New correction scheme for dB_Sun in Level 1b	Lars Tøffner-Clausen
15:00	15:15	Investigations of Swarm Euler Angles Using the CHAOS field model	Chris Finlay
15:15	15:30	A tiny -almost imperceptible- error in satellite magnetic field at magnetic equator? Real or artifact?	Angelo De Santis*
15:30	16:00	Coffee break	
16:00	16:15	Swarm ASM Burst mode L1b data	Pierre Vigneron*
16:15	16:30	On the improved experimental ASM vector mode data	Gauthier Hulot
16:30	16:45	The New Swarm-Echo Magnetic Field Data Product	David Miles
16:45	17:00	In-situ calibration of the Magnetic Field Instrument on Swarm-Echo	Robert Broadfoot*
17:00	**17:30**	**Discussion and Recommendations**	
17:30	**19:00**	**Ice Breaker**	

*remote participant

Day 2	Tuesday 12/10/2021			
All the talks and events are scheduled in Greek Local Time (CEST+1hour)				
		Session 3: GPSR and accelerometer		**Chair: Christian Siemes / Elisabetta Iorfida**
09:00	09:15	GPS and Accelerometer instruments and processors		Christian Siemes*
09:15	09:30	Advances in Swarm accelerometers data processing		Sergiy Svitlov
09:30	09:45	Analysis of Swarm A & C accelerometers' data - do we see signal or noise?		Elisabetta Iorfida
09:45	10:15	Coffee break		
10:15	10:30	Swarm total mass densities compared with models: how to interpret the results?		Sean Bruinsma*
10:30	10:45	Swarm precise orbit and density products		Jose van den Ijssel*
10:45	11:00	Combined gravity field models from Swarm GPS data		Joao Encarnacao*
11:00	**11:30**	**Discussion and Recommendations**		
11:30	**14:00**	**Lunch**		
		Session 4: Electric field measurements		**Chairs: Roberta Forte / Lorenzo Trenchi**
14:00	14:15	Electric field instrument and processors		Roberta Forte
14:15	14:30	The Swarm LPs, status and results		Stephan Buchert
14:30	14:45	Spike-trains in electron temperature measured from Swarm Langmuir probes (SPETTRALE project)		Matthias Foerster
14:45	15:00	Revalidation of plasma density measured by the Swarm Langmuir probe		Chao Xiong*
15:00	15:30	Coffee break		
15:30	15:45	Swarm EFI Science Update		David Knudsen*
15:45	16:00	A global survey on the electron temperature in the topside ionosphere through in-situ Swarm satellites observations and comparison with the International Reference Ionosphere model and Incoherent Scatter Radars data		Alessio Pignalberi*
16:00	16:15	Inference of Swarm Langmuir probe measurements with machine learning techniques		Akinola Olowookere*
16:15	16:30	Swarm EFI TII instrument status and data quality		Johnathan Burchill*
16:30	**17:00**	**Discussion and Recommendations**		

17:00	18:15	**Poster session 1**	

*remote participant

18:30/19:30 2 groups	**Visit to National Observatory of Athens (NOA)**

Day 3   Wednesday 13/10/2021

		Session 5: Swarm-based L2 data products and services	**Chair: Nils Olsen**
09:00	09:15	A Spherical Harmonic model of Earth's lithospheric magnetic field up to degree 1050	Erwan Thebault
09:15	09:30	A new approach of estimating electromagnetic induction transfer functions from satellite and ground data	Alexander Grayver
09:30	09:45	Updates to the equatorial electrojet and electric field product	Patrick Alken*
09:45	10:00	Swarm Whistler L2 data	Louis Chauvet
10:00	10:15	Extended climatological model of non-polar geomagnetic daily variations	Arnaud Chulliat
10:15	10:30	Swarm ULF wave indices using Convolutional Neural Networks	George Balasis
10:30	11:00	Coffee break	
11:00	11:15	Validating electron density fluctuations at mid and low latitudes using GPS TEC data	Yaqi Jin*
11:15	11:30	The Swarm Langmuir Probe Ion Drift and Effective Mass: Validation Status	Ivan Pakhotin*
11:30	11:45	Calibration of GRACE-FO and GOCE platform magnetometers using machine learning	Kevin Styp-Rekowski
11:45	12:00	Topside Ionosphere Radio Observations (TIRO) from CHAMP, GRACE and GRACE-FO	Lucas Schreiter
12:00	12:15	VirES for Swarm - evolution of the VirES and VRE services	Martin Pačes
12:15	**12:45**	**Discussion and Recommendations**	
12:45	**14:00**	**Lunch**	
		Session 6: Future missions	**Chair: Roger Haagmans**
14:00	14:15	Daedalus: a proposed mission for the in-situ exploration of the lower thermosphere-ionosphere. Status update and results from the Daedalus Mission Simulator.	Theodoros Sarris
14:15	14:30	Inferring ionospheric vertical profiles from Daedalus-like measurements and complementarity with Swarm	Octav Marghitu*
14:30	14:45	Progress of CSES-02 development and the concept proposal of CSES-03 constellation	Xuhui Shen*
14:45	15:00	MagQuest Phase 4: Tech Demos on Three Cubesats	Mike Paniccia*
15:00	15:15	Latest news about the NanoMagsat project	Gauthier Hulot
15:15	15:30	A high-precision and highly-elliptical-orbit geomagnetic constellation	Keke Zhang*
15:30	15:45	SMILE Presentation (TBC)	TBD
15:45	**16:15**	**Discussion and Recommendations**	
16:15	16:45	Coffee break	
16:45	**18:15**	**Poster session 2 + VirES DEMO**	

Dinner

*remote participant

Day 4   Thursday 14/10/2021

		Session 7: Science projects and applications Sub-session A	**Chair: Kathy Whaler**
09:00	09:15	Satellite magnetic data reveal interannual modes in Earth's core	Nicolas Gillet*
09:15	09:30	Separating signals in Geomagnetic Virtual Observatory time series using Principle Component Analysis	Will Brown*
09:30	09:45	Geomagnetic field modelling and polar ionospheric currents	Clemens Kloss
09:45	10:00	Overview of SIFACIT results	Octav Marghitu*
10:00	10:15	Dissipation of field-aligned currents via Joule heating in the topside ionosphere at high latitudes	Fabio Giannattasio*
10:15	10:30	Comparison of field-aligned currents and GIC variations	Malcolm Dunlop
10:30	11:00	Coffee break	
11:00	11:15	Monitoring the dynamic plasmasphere at low-Earth orbit	Balázs Heilig
11:15	11:30	Understanding the daily to monthly equatorial electrojet variability	Gabriel Brando Soares*
11:30	11:45	Comparison of Swarm equatorial electrojet with ICON/MIGHTI thermospheric winds	Yosuke Yamazaki
11:45	12:00	Swarm-VIP project - developing a global model for ionospheric plasma variability based on Swarm data	Wojciech Miloch*
12:00	12:15	Occurrence of GPS Loss of Lock Based on a Swarm Half-Solar Cycle Dataset and Its Relation to the Background Ionosphere	Michael Pezzopane*
12:15	**12:45**	**Sub-session A: Discussion and Recommendations**	
12:45	**14:00**	**Lunch**	
		Session 7: Sub-session B	**Chair: Stephan Buchert**
14:00	14:15	ROTEI: a new ionospheric index to investigate electron temperature small-scale variations in the topside ionosphere	Alessio Pignalberi*
14:15	14:30	Swarm-derived indices of geomagnetic activity	Constantinos Papadimitriou
14:30	14:45	The use of IPIR L2 data product in global studies of ionospheric plasma	Wojciech Miloch*
14:45	15:00	Global distribution of TLE (Transient Luminous Events) derived from Swarm data	Ewa Slominska
15:00	15:15	Characteristics of Whistlers in the ELF as observed during ASM burst sessions	Pierdavide Coïsson
15:15	15:30	Mapping High Energy Particle Population in Earth's Magnetosphere using Swarm and MMS	Christina Toldbo
15:30	16:00	Coffee break	
16:00	16:15	Small-scale (sub-kilometer) plasma density structures using high-cadence Swarm-E plasma current data	Andrew Yau*
16:15	16:30	Swarm-E Time of Flight Analysis of Ion Upflow and Downflow Velocities	Victoria Foss*
16:30	16:45	Swarm-E GAP data for observing ionospheric electron content and multi-scale plasma structures	Chris Watson*
16:45	17:00	Effects of Atmospheric and Spacecraft-generated Photoelectrons on Spacecraft Charging in Topside Ionosphere	Andrew Yau*
17:00	17:15	Investigating the impact of the new data calibration on F-region current density estimates	Martin Fillion
17:15	**17:45**	**Sub-session B: Discussion and Recommendations**	

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		Session 8: Swarm - CSES synergies	**Chair: Gauthier Hulot/ Zeren Zhima**
09:00	09:15	Cross-calibration on the electromagnetic field detection payloads onboard CSES.	Zeren Zhima*
09:15	09:30	In-flight calibration of CSES HPM data	Yanyan Yang*
09:30	09:45	The regular interferences recorded by Langmuir probe on-board low Earth polar orbit satellite CSES	Rui Yan*
09:45	10:00	Predicting Swarm Observations and Detecting Anomalies within the Observations by Deep Learning Approaches	Yaxin Bi
10:00	10:15	Comparison of Swarm and CSES to study ionospheric disturbances before or during the occurrence of medium / large earthquakes	Dedalo Marchetti*
10:15	10:30	Ionospheric Pc1 waves during a storm recovery phase observed by the China Seismo-Electromagnetic Satellite	Xiaochen Gou*
10:30	10:45	The effects on lightning whistlers analysis due to discontinuities in SCM waveform data	Qiao Wang*
10:45	**11:00**	**Discussion and Recommendations**	
11:00	11:30	Coffee break	
		Session 9: Summaries , Recommendations & Future	**Chair: Jerome Bouffard**
11:30	11:40	Summary & Recommendation session 2	Nicola Comparetti / Jan Miedzik
11:40	11:50	Summary & Recommendations session 3	Christian Siemes/Elisabetta Iorfida
11:50	12:00	Summary & Recommendations session 4	Roberta Forte / Lorenzo Trenchi
12:00	12:10	Summary & Recommendations session 5	Nils Olsen
12:10	12:20	Summary & Recommendations session 6	Roger Haagmans
12:20	12:30	Summary & Recommendations session 7	Kathy Whaler / Stephan Buchert
12:30	12:40	Summary & Recommendations session 8	Gauthier Hulot/ Zeren Zhima
		Open discussion	

DQW #11 Closure

Lunch

NanoMagSat Meeting — Organized by IPGP

14:00	16:00	NanoMagSat Consortium presentations	**Chair: Gauthier Hulot**
16:00	16:30	Coffee break	
16:30	18:30	**Open discussion** **to be potentially continued on Saturday morning**	

*remote participant

Posters

1	Swarm PDGS Status & Evolution	Antonio de la Fuente
2	Swarm data products delivered by GFZ to the ESA's Payload Data Ground Segment (PDGS)	Guram Kervalishvili
3	Core surface flow changes associated with the 2016 Pacific jerk deduced from GVO secular variation gradients	Kathy Whaler
4	Swarm L2: Comprehensive Inversion using 7½ years of Swarm Data	Lars Tøffner-Clausen
5	Sequential modelling of the core magnetic field and associated flow	Vincent Lesur*
6	Secular Variation Signals in Magnetic Field Gradient Tensor Elements derived from Swarm-based Geomagnetic Virtual Observatories	Magnus Danel Hammer
7	Observatory quality magnetic data from ground and space	Eija Tanskanen*
8	Estimating the properties of the magnetic lithosphere from satellite and aeromagnetic data	Jörg Ebbing*
9	Inversion of the satellite-observed tidal magnetic fields in terms of three-dimensional upper-mantle electrical conductivity	Jakub Velímský
10	Direct Sequential Simulation for spherical linear inverse problems	Mikkel Otzen
11	Comparison of SWARM and GRACE time-variable gravity field at low degree spherical harmonics	Hugo Lecomte
12	Equatorial Spread F-related electromagnetic energy flux	Juan Rodriguez-Zuluaga
13	Dynamical complexity in Swarm time series using entropy analysis	George Balasis
14	The effective ion mass estimated from Swarm Langmuir probe and faceplate data (SLIDEM project)	Matthias Foerster
15	Different typical disturbances in Swarm LP and POD data detected by spectral analysis.	Wojciech Jarmołowski
16	Quality Assessment and Features of the ePOP MGF 1 Hz Swarm L1b CDF lookalike product	Martin Rother*
17	VirES and beyond: Data visualisation and a Python ecosystem for Swarm	Ashley Smith*
18	Electron temperature across equatorial plasma density depletions	Juan Rodriguez-Zuluaga
19	Time dependent Comsol simulations of the ASM/VFM magnetic field disturbance	Gabriela Blaga*
20	Comparative Anomaly Detection for Swarm and CSES Data by Deep Learning-based Data Analytics	Yaxin Bi
21	Combination of Swarm and COSMIC-2 ionospheric observations for plasma irregularities specification.	Iurii Cherniak
22	Use of Swarm ionospheric products for COSMIC-2 Calibration/Validation campaign	Irina Zakharenkova
23	First results from the Swarm DISC TOLEOS project: GRACE and GRACE-FO accelerometer data quality and radiation pressure modelling	Christian Siemes*
24	The multi observations around strong Yutian Earthquakes in China during 2008-2020	Xuemin Zhang*
25	Altitude distribution of equatorial ionospheric irregularities sampled from an elliptical low-earth orbit	Ali Mohandesi*

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