Aeolus wind data assimilation impact on aeolian dust modelling with WRF-CHEM - Jonilda Kushta

- WRF-CHEM model for atmospheric dust simulations initialized with IFS outputs with/without Aeolus observations assimilated
- Period of interest: October 2020 --> Rich dust activity in the central eastern Mediterranean --> Improvements on WRF dust simulated fields, thanks to Aeolus wind assimilated fields - validated against ground-based (AERONET, PollyXT, EMEP) and spaceborne (MIDAS, LIVAS) dust products

Characterization of Aeolus wind measurement errors – Federico Cossu

- Spectral integration method and the spatial variances method are used to estimate the representativeness errors ($r^2$) of collocated observation data sets
- 4D wind data triple collocation (TC) of Aeolus, MODE-S, ECMWF model output (concentric circles) to characterize Aeolus observations - investigation of $r^2$ still in progress
- Larger errors for Rayleigh winds with respect to Mie - errors depend on the distance between observations and on the sampling

Reprocessed Aeolus L2B Wind Data: Quality of Second Reprocessed Dataset and Preparations for the Third Reprocessing - Saleh Abdalla

- Reprocessed dataset 2 based on B11 (Jul 2019 – Oct 2020) - small overestimation of high HLOS wind speeds for Mie and Rayleigh winds
- Ascending Mie winds usually better than descending (more clouds – larger sample)
- Third reprocessed dataset based on B14 (trial – no BC) - overestimation is reduced in Rayleigh, very good agreement for Mie between Aeolus and model
- Errors increase right after mission start, saturation around March – May 2019

Merging the clouds retrieved from ALADIN/Aeolus and CALIOP/CALIPSO space-borne lidar observations - Artem Feofilov

- Comparison of scattering ratio for detecting clouds retrieved from Aeolus and Calipso (diff. wavelength and geometries) - Aladian at least as sensitive as Caliop
- Investigation of the clouds diurnal cycle effect on the Aeolus - Calipso agreement (taking into account the differences in overpass times)
- Compensating for the diurnal cycle effects using AIRS/IASI improves the agreement over land (where differences in cloud amount is up to 20%) - diurnal cycle of CATS lidar may lead to further improvements

Winds from Aeolus lidar SEA surface reFLECTance (SEA-FLECT) - Stephen Tjemkes

- Assessment of the potential of the Aeolus observations for monitoring sea surface winds + reflectance in south east pacific (oligotrophic region) and southern extratropical ocean region (storm track zone)
- Large scatter in the proxy reflectance in low wind speed regime – very noisy without binning
- Analysis on the Mie ACCD counts shows weak signals – attributed to large footprint, range bin definitions, atmospheric correction, no radiometric calibration, noise obtained from background signal when sun is low (under investigation)