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Towards AOD1B RL07

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The Atmosphere and Ocean De-Aliasing Level-1B (AOD1B) product provides a priori information about temporal variations in the Earth's gravity field caused by global mass variability in the atmosphere and ocean and is routinely used as background model in satellite gravimetry. The current version 06 provides Stokes coefficients expanded up to d/o 180 every 3 hours. It is based on ERA-Interim and the ECMWF operational model for the atmosphere, and simulations with the global ocean general circulation model MPIOM consistently forced with the fields from the same atmospheric data-set.

We here present preliminary numerical experiments in the development towards a new release 07 of AOD1B. The experiments are performed with the TP10 configuration of MPIOM and include (I) new hourly atmospheric forcing based on the new ERA-5 reanalysis from ECMWF; (II) an improved bathymetry around Antarctica including cavities under the ice shelves and the consideration of shielding effects of the ice cover; and (III) an explicit implementation of the feedback effects of self-attraction and loading to ocean dynamics.