



## **Evaluation of the RL05 GRACE atmosphere and ocean dealiasing level 1B (AOD1B) product with precise orbit and altimetry analysis**

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GRACE Atmospheric and Oceanic De-aliasing Level-1B (AOD1B) product is intended to serve as a background model for a wide range of satellite missions. The main usage of AOD1B is the removal of high-frequency non-tidal mass variations due to short-term (daily and sub-daily) mass transport in the atmosphere and oceans. AOD1B shall avoid aliasing of these high frequency signals into monthly gravity models derived from modern gravity missions (CHAMP, GRACE or GRACE-FO) and shall help to derive consistent orbit solutions for altimetry and SLR satellites. The latest AOD1B Release 05 (RL05) is provided for the period Jan 1st, 2001 till today and updated on an approximately weekly basis. It includes several improvements over the ocean due to an updated parametrization and spatial resolution of the oceanic part contributed by the Ocean Model for Circulation and Tides (OMCT). For the atmospheric part, as well as for the ocean response to atmospheric pressure, the necessary input data is extracted from the operational analyses of the European Centre for Medium Range Weather Forecast (ECMWF). Recently, we successfully extended backward to 1976 the last AOD1B RL05, based on ERA-Interim and ERA-40 (ECMWF Re-Analysis) input data. The new time series are stable and free from discontinuities caused by changes in the ECMWF input model. Some results of the evaluation of the new and previous releases of the AOD1B product for precise orbit determination (POD) of altimetry satellites ERS-1 (1991-1996), ERS-2 (1995-2006), TOPEX-Poseidon (1992-2005), Envisat (2002-2012) and Jason-1 (2002-2012) at the time intervals given and altimetry analysis are presented.