



## **Determination of oceanic mass changes with radar altimetry, Argo profiles and GRACE measurements**

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Sea level variation is the net sum of two major contributions: (1) Steric sea level change, affected by variations of temperature and salinity. (2) Sea level also changes due to water mass redistribution within the ocean and freshwater im- and export. Satellite radar altimeters measure the combination of both effects. For a better understanding of global sea level change, it is crucial that its steric and eustatic components can be distinguished. To gain oceanic mass changes we pace two different ways. Firstly via altimetry measurements (JASON-1 distributed from AVISO), which we reduced of the steric component by ARGO-difters data (from the CORIOLIS project/IFREMER). Secondly we used GRACE data (processed at GFZ) with the recent release product RL04, Hamming filtering and 700 km half length width. We compare these two data sets calculated on  $1^{\circ} \times 1^{\circ}$  grids to validate the time-variable GRACE-fields. Furthermore we investigate the effect of geocenter motion (provided by JPL), because the center of mass (reference system for GRACE) of the solid Earth does not coincide with the geometric center of the total Earth (received by the difference of JASON1-ARGO). For the years 2002 (GRACE mission started in 2002) to 2007 results on basin (in particular for the Atlantic Ocean) and global scales will be presented.