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Poster
Comparisons to in situ data and estimation of errors in the Dynamic Atmospheric Correction

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Given its current accuracy and maturity, altimetry is considered a fully operational observing system dedicated to various applications such as climate studies or operational oceanography. Altimeter measurements are corrected for several geophysical effects in order to isolate the oceanic variability. In particular, the dynamic atmospheric correction (DAC) allows for the removal of high frequency variability induced by the atmospheric forcing and aliased by the altimetric measurements.

The high frequency part of the DAC is based on a barotropic model simulation forced by atmospheric pressure and winds (MOG2D; Carrère and Lyard 2003); the low frequency part is an inverse barometer response. A 20-day cutoff-period for the high frequency part was chosen because it corresponds to the Nyquist period of T/P-Jason reference altimeters' sampling and because the variability is mostly barotropic in this high frequency band.

The purpose of the study is to estimate the quality of the dynamic atmospheric correction on the global ocean. For this purpose, comparisons with several in situ databases (tidal gauges and bottom pressure records) have been performed, considering different frequency bands (0-20 days, 20-30 days, 30-60 days and over 60 days). The results show the good performances of the DAC for high frequencies and for high latitudes and lower performances at low latitudes as expected; the residual signal allows an estimation of the DAC error for the high frequency band.
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