

Comparison of ERS-1 sea-surface variability with TOPEX/Poseidon and tide gauge data

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Abstract

This study compares the sea-surface variability of ERS-1 as determined from the 35 day multi-disciplinary orbit with the corresponding variability from TOPEX/Poseidon and tide gauge data. The variability is determined by optimal interpolation over small surface bins with correlation analyses undertaken against tide gauge data from the WOCE and TOGA datasets. An EOF analysis is also performed to compare ERS-1 variabilities against the corresponding time series obtained from TOPEX/Poseidon. Orbital accuracy is an important issue and radial heights are taken from the Delft University of Technology and from the Center for Space Research, Texas both of which are available to users over the internet. The effect of the orbital accuracy on the variability studies is considered with particular reference to the annual and inter-annual cycles.

Keywords: sea-surface variability