

A Reanalysis of ERS-1 Radar Altimeter Data for Ocean Circulation Studies.

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The goal of the NASA sponsored Ocean Altimeter Pathfinder Project is to reprocess all satellite altimeter data sets with improved algorithms to provide a consistent and validated global view of sea surface topography over the past two decades. The first stage of this project has been completed for Geosat, ERS-1, and TOPEX/POSEIDON. In this presentation, we will highlight work with the ERS-1 data set and demonstrate its value to the new climatology. In particular, we are blending ERS-1 and TOPEX/POSEIDON data sets to provide a high resolution view of sea surface topography variations between 1992 and the present. As part of the pathfinder goals, we have improved the precision of the ERS-1 altimetry. The cross over variation of these reprocessed ERS-1 altimeter data is 5.6 cm rms over the Phase C part of the mission. This can be compared with 3.3 cm rms that is found for TOPEX/POSEIDON over three years. The combined TOPEX/POSEIDON and ERS-1 data set has a residual of 4.9 cm rms. Comparisons between these data sets with tide gauges and general circulation models will be shown at the meeting.