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Poster
Eight years of weekly sea level anomalies (SLA) regional maps in the Western Mediterranean are analyzed, using automated eddy detection and tracking methods, in order to understand the smaller mesoscale variability and its regional dynamics. Results show that eddies in the region seem to propagate following the main current. The areas of higher eddy amplitude correspond to areas of higher eddy kinetic energy calculated from altimetry SLA. Seasonal changes in eddy anticyclonic/cyclonic frequency are shown, with distinct seasonal changes especially in the coastal zone. In the Gulf of Lion, anticyclones are more frequent in winter, and cyclones occur more in summer. The eddy generation sites also vary seasonally, and study is underway to understand their relation to seasonal wind forcing, slope current intrusions onto the shelf, or seasonal Rhone river variations. Eddy detection from the mapped satellite altimeter data is then used to better understand the finer-scale variations. This is first done using information from the CTOH/LEGOS along track coastal altimetric product, which uses the higher?frequency sampling associated with new filtering techniques. These altimetry products are also compared with in situ data collected by gliders. The objective of this comparison is to test the signal to noise of the alongtrack altimetric data sets as they pass over distinct mesoscale structures, to enable future improvements in filtering and editing. Preliminary results show a general good agreement between the structures observed from glider trajectories and the velocity fields obtained from along track Jason-2 SLA data, when observing large mesoscale structures (100-200km; r=0.8), although a good agreement is also detected between gliders data and DUACS/AVISO regional Mediterranean maps (r=0.9). When the gliders pass over smaller structures (20-50 km), lower correlation values are obtained when comparing glider and altimetry data (r=0.7 for the along track Jason-2 product corrected by the CTOH group and r=0.45 for the DUACS regional product). This work is ongoing to better understand the observability of the smaller mesoscale structures in alongtrack data, and will be extended in the future to SARAL/AltiKa and Cryosat-2 data.
OSTS session
Quantifying Errors and Uncertainties in Altimetry Data
Meeting name
Ocean Surface Topography Science Team (OSTST) Meeting
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