Geophysical Research Abstracts
Vol. 15, EGU2013-9906, 2013
EGU General Assembly 2013

The impact of satellite surface salinity observations (SMOS) on estimates of the ocean state and on surface fresh water fluxes

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The GECCO synthesis system is being used to investigate the impact of satellite sea surface salinity (SSS) fields from the SMOS mission on the synthesis of ocean observations. The GECCO system combines most of the data available during the estimation period with the ECCO/MIT ocean circulation model using the adjoint method. The work focusses on a 2 year experiment 2010 - 2011 during which in addition to traditional observations we also assimilate SMOS SSS fields. In this context, the L3 SSS SMOS product and the error estimates of the SMOS SSS fields are presented. This GECCO estimate is analyzed here with respect to changes in time mean and time varying salinity, especially the seasonal cycle. Also investigated is the impact of SSS fields on estimates of the surface net fresh water fluxes.