Geophysical Research Abstracts
Vol. 13, EGU2011-3244, 2011
EGU General Assembly 2011

Sea level variability in the Arctic Ocean from satellite altimetry

pierre prandi (1), michael ablain (1), nicolas picot (2), and anny cazenave (3)
(1) CLS, Ramonville, France (pierre.prandi@cls.fr), (2) CNES, Toulouse, France, (3) LEGOS/CNRS, Toulouse, France

The Arctic region's climate is undergoing rapid changes. However, identifying such changes is difficult due to lack of observational data. In particular sea level variability is largely unknown. Satellite altimetry has proven to be an effective way of monitoring sea level changes on global and regional scales. At high latitudes, satellite altimetry suffers from low data quality and its use is not as straightforward.
After investigating some sources of low satellite data quality at high latitudes, we derive a new processing for the Arctic Ocean region. We use this processing of satellite altimetry data to generate a set of weekly multi-mission grids over the 1993-2009 period.
This improved dataset provides a better sampling of the Arctic Ocean compared to the AVISO multi-mission global grids used as a reference. The new dataset is used to calculate new estimates of regional and local sea level variability and trends which are slightly different from previous estimates of Arctic Ocean mean sea level rise. This work provides one of the first reliable attempts to evaluate regional sea level rise in the Arctic Ocean from satellite altimetry data.