Geophysical Research Abstracts,
Vol. 11, EGU2009-13672, 2009
EGU General Assembly 2009

Stability and seasonality of ocean tide estimates from satellite altimetry

O.B. Andersen
DTU-Space, Juliane Maries Vej 30, DK-2100 Copenhagen Oe, Denmark (oa@space.dtu.dk)

Accurate sea level measurements from the TOPEX/POSEIDON satellite have vastly improved our knowledge about global ocean tide since its launch in 1992. Similarly hydrodynamic models have advanced in both resolution and ability include more and more diurnal and semi-diurnal constituent, and even higher harmonic shallow water constituents like M4.

In this presentation 16 years of TOPEX+JASON1 altimetry have been used to investigate the stability of the ocean tide estimates. On the northwest European shelf the major semidiurnal tide has different amplitude in summer and winter ranging up to nearly 8% of the tidal amplitude and a slight phase change. This seasonal modification of the semi diurnal tide has also been seen from local gauges around the North Sea, but has not been registered elsewhere.

In addition some minor year to year fluctuations in the amplitude of the largest tidal constituents are seen from local tide gauges and these very local phenomena are also investigated from altimetry.