



Global and local tide modeling. Linear and non-linear tides from altimetry and GPS

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Accurate sea level measurements from the TOPEX/POSEIDON satellite have vastly improved our knowledge about global ocean tide since its launch in 1992. One of the outstanding problems in global tidal modeling is accuracy in shallow water regions, where complex tidal pattern, and non-linear means that the global model are not sufficiently accurate.

On the northwest European shelf the tides are dominated by semi-diurnal constituents and their shallow water constituents (M4, MS4, MNS2, MN4, and M6). One example is the M4 constituent, which exceeds 30 cm in the English Channel and which is not available in most global ocean tide models.

New tidal estimates of the linear and non linear tides have been derived using satellite altimetry and a few localized GPS observations. Particularly the value of GPS observations on oil-rigs for tidal purposes and the availability of new observations from the T/P interlaced altimetric mission will be addressed, and a new global ocean tide (DNSC_07) will be presented.