

Theme: Geodesy

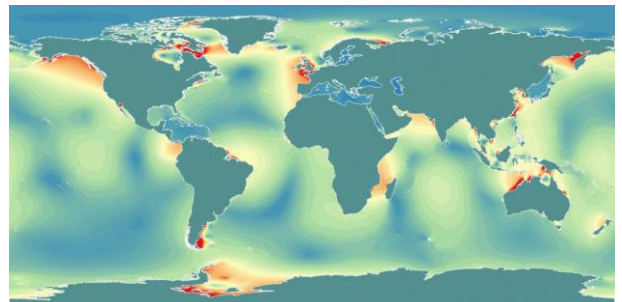
A global reference surface for depths

Background

The lowest astronomical tide (LAT) has been adopted by the International Hydrographic Organization as the vertical reference surface for depths, i.e. the so-called chart datum. Many countries have adopted this choice. Some of those countries have now also calculated and published the ellipsoidal heights of the LAT surface for their own territorial waters. These heights are particularly important in applications that use GNSS to map depths. For large parts of the world, the ellipsoidal heights of LAT are not available, which repeatedly presents the offshore industry with the task of calculating them.

Purpose of the research

The main goal of this project is to calculate and validate a global LAT model. In doing so, we will rely on satellite radar altimeter-derived ocean tide models and mean sea surface models. A number have been published for both. After we have gained insight into the differences between these models, we will first calculate LAT compared to the mean sea surface. Naturally, we will also validate this product based on a dataset with in-situ measured tide data. In the next step we will combine LAT values derived from tide gauge record with our global model. We must take the morphology of the coastline into account. Finally, we calculate LAT with respect to the ellipsoid. We will also validate this product.



Supervision

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