



Ensemble Kalman filtering of Earth rotation observations with a global ocean model

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The world oceans play a major part in the excitation of the Earth's rotation anomalies. Especially, for polar motion atmospheric and oceanic contributions are equally strong. Oceanic contributions to length of day changes are smaller but still not negligible.

We study the oceanic excitations by Singular Evolutive Interpolated Kalman-Filtering of ocean angular momentum which we derived from observed Earth rotation anomalies. The assimilation is done with an ensemble of global ocean circulation models.

We succeeded in the reproduction of the observation based oceanic angular momentum and report on the methods sensitivity with respect to error budgets and ensemble initialization strategies. Sufficient and insufficient mechanisms of oceanic angular momentum generation are discussed.