Assimilation of Earth Rotation Parameters in an ocean model

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'Oceanographic' Earth rotation parameters (OERP) are calculated by subtracting atmospheric and hydrologic estimates from observed ERP. They are used to constrain a global ocean circulation model. Additionally mass variations derived by GRACE are used. We apply a sequential assimilation method of the type of reduced rank error subspace Kalman (square root) filters with weekly resolution. OERP mostly constrain the oceanic mass budget via the inertial rotational tensor while GRACE data determine mass redistribution in the ocean. On the other hand, ocean velocities are only loosely constrained by OERP.