

THE ECCO ROUTINE GLOBAL OCEAN DATA ASSIMILATION SYSTEM

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An ocean data assimilation system producing regular analyses is established so as to monitor global ocean circulation and to better understand processes underlying the ocean's seasonal-to-interannual changes. The data assimilation system is a product of the consortium "Estimating the Circulation and Climate of the Ocean (ECCO)" and is a contribution to GODAE. The system is based on a near-global primitive equation model of high resolution (1-deg telescoping to 0.3-deg with 10m near surface layers). Measurements from satellite altimetry (TOPEX/POSEIDON, Jason-1) and in situ hydrography (XBTs, moorings, floats, and climatology) are assimilated. The assimilation is based on a hierarchical approach that consists of 1) a Green's function method to adjust gross characteristics of the model, 2) a partitioned Kalman filter and smoother for routine assimilation and analysis, and 3) an adjoint method for periodic rigorous optimization. Analyses are regularly updated and are available via a Live Access Server at <http://www.ecco-group.org/las>. The data assimilation system will be reviewed and examples of its applications will be described.