Geophysical Research Abstracts
Vol. 12, EGU2010-7961, 2010
EGU General Assembly 2010

Implementation of 3D-VAR and assessment of forecast skill for Regional Ocean Circulation Model in East Asian Marginal Sea

Young Ho Kim, Gyun-Do Pak, and Hong Sik Min

Climate Change & Coastal Disaster Research Department, Korea Ocean Research & Development Institute, Ansan, Korea(yhkim@kordi.re.kr)

We applied 3-dimentional variational data assimilation technique (3D-Var) to the MOM3-based regional ocean model in the East/Japan Sea (EJS) which is an East Asian marginal sea. Satellite-borne sea surface temperature and sea surface height, and temperature profiles have been assimilated into the model. The numerical performance of the regional ocean model with 3D-Var system appears to be efficient enough to be used in an operational ocean forecast system.

Model-data comparison shows that the reanalysis produced by 3D-Var system fairly well represents not only the mean circulation but also meso-scale eddies in the EJS. The overall root-mean-square error between 100m temperature fields of reanalysis and observation is 2.1 oC, and the spatially averaged grid-to-grid correlation is high with a mean value of 0.79 for the inter-comparison period.

For the assessment of forecast skill of the regional ocean model, we compared the measured temperature by the Pressure-equipped Inverted Echo Sounder and hindcasted one initialized by means of the 3D-Var system in the south-western basin of the EJS. The forecast skill of our regional ocean model will be displayed.