Geophysical Research Abstracts,
Vol. 11, EGU2009-7346-1, 2009
EGU General Assembly 2009

Realistic simulation of wind induced surface currents in North Western coastal Mediterranean Sea.

A. Schaeffer (1,2), I. Pairaud (2), S. Coudray (2), A. Molcard (1), P. Fraunié (1), P. Forget (1), P. Garreau (2), and D. Sauzade (2)

(1) Universite TOULON, LSEET, La Garde cedex, France (Philippe.Fraunie@lseet.univ-tln.fr), (2) IFREMER DYNECO/ Centre Méditerranée La Seyne sur Mer

In order to achieve water quality management, daily high resolution numerical simulations of coastal flows are run in West Northern Mediterranean sea using nested grids up to 100 m of Ifremer MARS 3D model. Validation and improvement of the model are performed using moorings, drifted buoys and HF radar series of measurements. The wind forcing resolution is in particular assessed for coherent patterns prediction, occurring at the size of the local Rossby radius, i.e. few kilometres. Process oriented investigation and forcing factors analysis allow to better understand lacks in forecasting model of dispersion.

Acknowledgements : MeteoFrance and Ifremer support Amandine Schaeffer's PhD. This work is part of the GIRAC project in the framework of the Pole Mer http://polemerpaca.tvt.fr/

References :

André G., Garreau P., Garnier V., Fraunié P., 2005. Modelled variability of the sea surface circulation in the North-western Mediterranean Sea and in the Gulf of Lions. Ocean Dynamics, 55: 294–308

André G., Garreau P., Fraunié P., Mesoscale slope current variability in the Gulf of Lions. Interpretation of in-situ measurements using a three-dimensional model, in press, Cont. Shelf Res.

Forget, P., G. André, 2007. Can satellite-derived chlorophyll imagery be used to trace surface dynamics in coastal zone ? A case study in the Northwestern Mediterranean sea, Sensors, 7, 884-904.

Jouon A., Douillet, P., Ouillon, S., Fraunié P. 2006. Calculations of hydrodynamic time parameters in a semi-opened coastal zone using a 3D hydrodynamical model. Cont. Shelf Res. 26 1395-1415

Molcard A., Poulain P.M., Forget P., Griffa A., Barbin Y., Gaggelli J., De Maistre J.C. and M. Rixen 2008. Comparison between VHF radar observations and data from drifter clusters in the Gulf of La Spezia (Mediterranean Sea), J. Marine Sys. In press