



Impact of mesoscale eddies on sub basin-scale circulation in the Eastern Mediterranean sea

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The circulation in the eastern Mediterranean basin has been studied using a general circulation model with very high horizontal resolution (4.6-5 km), climatologies, in-situ and remote sensed observations. The model has been forced for 24 years by the daily sea surface fluxes provided by the ECMWF analysis corresponding to the period from 03/1998 to 06/2003.

The surface circulation patterns are dominated by mesoscale structures (filaments, meanders and eddies). This analysis shows a good agreement between the model surface circulation, in-situ and satellite observations. The simulation shows how meso-scale eddies can control the general circulation in the basin. Depending on the position and development of these eddies, different circulation regimes are observed. In particular, eddies in the Levantine basin (Egyptian eddies, Ierapetra) can block and force offshore bifurcations of the coastal surface Atlantic inflow. Impacts of these circulation regimes on the convection and LIW formation are investigated as well as the recirculation of the Asia Minor Currant (AMC).

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