ON THE MESOSCALE VARIABILITY OF THE WESTERN MEDITERRANEAN AND ITS IMPACT ON THE WATER TRANSPORT - A MODEL STUDY

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Recent studies revealed a strong impact of the mesoscale eddies on the water mass transport in the Algerian Basin. The observations showed in particular that the mesoscale eddies, which follow a cyclonic circuit around the basin may trap and transport surface and intermediate water masses on their way.

The Mediterranean Sea variability since 1979 is simulated with an ocean general circulation model with 1/8 degree horizontal resolution. The model is forced with 6 hours ECMWF surface atmospheric fields. The simulations of the western part of the Mediterranean Sea are compared with available observations of the mesoscale variability in the basin. It is shown that the characteristics of eddies, with scale larger than few of tens kilometres, are similar in the model results and the data. The role of the eddies on the transport of the Levantine Intermediate Waters, Winter Intermediate Water and Western Mediterranean Deep Water is discussed.