An Overview of the Adriatic Sea Modelling System and of the Adriatic Sea Ecosystem Modelling Developed within the Mediterranean Forecasting System Project

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A modelling system for the Adriatic Sea has been built within the framework of the Mediterranean Forecasting system Pilot Project. The modeling system consists in a hierarchy of three numerical models (whole Mediterranean Sea, whole Adriatic Sea, Northern Adriatic Basin) coupled among each other by simple one-way, off-line nesting techniques, to downscale the larger scale flow field to highly resolved coastal scale fields. Numerical simulations have been carried out, under climatological surface forcing. Simulations were aimed to assess the effectiveness of the nesting techniques and the skill of the system to reproduce known features of the Adriatic Sea circulation phenomenology (main circulation features, dense water formation, flow at the Otranto Strait and coastal circulation characteristics over the northern Adriatic shelf), in view of the pre-operational use of the modeling system. The modeling system setup is described, and the simulation results for the whole Adriatic Sea and its northern basin are discussed in comparison with the observed climatological circulation characteristics. Unidimensional ecological modelling for the northern Adriatic Sea has been also carried out in view of the three dimensional implementation of the ecological model.