**Ocean Science
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Interactive comment on "Operative forecast of hydrophysical fields in the Georgian Black Sea coastal zone within the ECOOP" *by* A. A. Kordzadze and D. I. Demetrashvili

K. Bilashvili

wocean@telenet.ge

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RC The forecasting system presented in this paper is a part of the nowcasting/forecasting system of the Black Sea state and enables to calculate 3-days' forecasts of main hydrophysical fields with high resolution for the Easternmost part of the Black Sea. The problem is very actual and is dealing with one of the important aspects of Black Sea Oceanography – development of forecasting system of the Black Sea state. The novelty is that the forecasting system is developed for the first time for the Easternmost part of the Black Sea. Creation of such systems for coastal and shelf zones has a great importance because just these zones have a big anthropogenic

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loading. The regional forecasting system is based on a regional model of the Black Sea dynamics which is developed by adaptation of the basin-scale circulation model for the Easternmost part of the basin. It should be noted, that in turn the basin scale circulation model of Institute of Geophysics (Tbilisi, Georgia) is an improved version of the model of the Black Sea dynamics described in articles by Marchuk, Kordzadze, Skiba (1975) and Marchuk, Kordzadze (1986). The regional model is nested in the basin scale model of Marine Hydrophysical Institute (Sevastopol/Ukraine). The received results are important both from scientific and practical point of view and demonstrate an ability of the regional model to describe local dynamical processes more effectively. The comparative analysis of fields predicted from the regional model and the basin scale model of Marin Hydrophysical Institute (Sevastopol/Ukraine) convincingly shows that the high resolving capacity of the mathematical model is very important factor to reproduce local peculiarities of flow and thermohaline fields in the Georgian coastal zone. In my opinion, an important interest represents also strong seasonal variability of a circulation mode in the considered region. In general, the Caucasian coast is dynamically active zone and it is well visible by results presented in the paper, in the summer the main element of the regional circulation in the considered area is the Batumi anticyclonic eddy, but in the autumn the circulation has a vortical character with formation of cyclonic and anticyclonic eddies of small sizes. A numerical method used for solution of model equations is a well-known splitting method, which is very effective for solution of 3-D problems of atmosphere and ocean dynamics. I have to authors following remarks and suggestions: 1. In a title of the article the word "operative" must be removed because as I understood the system still does not work in operative mode. 2. add some words about future model development including free surface and nonhydrostatic effects. 3. Further development of the coupled modeling system on the basis of elaborated regional Forecasting system, which will allow to predict also distribution and intensity of different anthropogenic impurity at emergency situations. I recommend to publish the article in Ocean Science (OS) and I think it will be interesting not only for experts – oceanographers who are engaged in the Black Sea processes, but also for

oceanographers engaged in other coastal regions of the World ocean.

Interactive comment on Ocean Sci. Discuss., 8, 397, 2011.

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