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Inverse problem on the reconstruction of the vertical heat exchange coefficient in a model of World Ocean hydrodynamics

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The ARGO float system gives the unique operative information about the basic World Ocean parameters behavior on the depth. With this information it can be possible to solve different problems of the ocean hydrothermodynamics, one of them is the inverse problem of vertical heat exchange coefficient reconstruction.
This work is devoted to the studying of the inverse problem on the reconstruction of the vertical heat exchange coefficient. In order to solve this problem numerically the assimilation of ARGO float system data were used.
The numerical experiments on reconstructing the vertical heat exchange coefficient in the World Ocean circulation model were carried out. They confirm the theoretical results and advisability of using the proposed procedure for reconstructing the vertical heat exchange coefficient in the World Ocean circulation model.
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References
1. Agoshkov V.I., Marchuk G.I., On solvability and numerical solution of data assimilation problems. - Russ. J. Numer. Anal. Math. Modelling, 1993, Vol.8, No. 1, 1-16.
2. Agoshkov V.I., Methods of Optimal Control and Adjoint Equations in Problems of Mathematical Physics. – INM RAS, Moscow, 2003 (in Russian).
3. Parmuzin E.I., Shutyaev V.P., Numerical algorithms for solving a problem of data assimilation. – Comput. Math. Math. Phys. (1997) 37, No. 7, 792-803.