

3D modeling of the hydroisostasy effect

with a configuration of Moho surface of the Sea of Okhotsk close to real

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Abstract. Interrelation between global sea level changes during Glacial–Interglacial periods and Earth surface deformations is studied using digital simulation methods. During Earth surface deformations, the deformation amplitude is expected to depend on variable thickness of the upper lithospheric layer. 3D modeling allows to take into account thickness variation of the lithospheric layer. In this work, 3D modeling of hydroisostasy under marine transgression similar to Interglacial ones for the Sea of Okhotsk has been made with creating a mesh on the base close to real bathymetry of the Sea of Okhotsk and Moho surface configuration. Simulation has been done by finite element method by Elmer software suite. As a result, relation between Moho surface configuration and Earth surface deformation was found.

Keywords:

postglacial transgression, mantle viscosity, hydroisostasy, vertical movements, Elmer, finite element method

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