



## **Numerical modelling of tsunami generation in consideration of water compressibility and bottom elasticity**

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In our recent publications [1, 2] it has been shown that the problem of tsunami generation by bottom earthquakes must be considered in the framework of compressible fluid theory. The elastic properties of water and sea floor are not essentially different, thus a realistic model of tsunami generation should take into account both water compressibility and bottom elasticity. Being suggested in 70th [3] this approach is developed nowadays in several groups [4-6]. In this study we consider a compressible liquid layer on multilayered solid (elastic) bottom. At the interfaces between the liquid layer and bottom continuous normal stress and normal displacement were specified, whereas the shear stress was absent. At the interfaces between solid layers continuous stresses and displacements were specified. And free pass boundary conditions were set at left, right and bottom boundaries of calculating area. A “seismic source” is set as a given travel-wave displacements at the interface between two solid layers. In order to describe dynamic processes 2D numerical model was developed. Results of numerical modelling are used for interpretation of bottom pressure variations registered by JAMSTEC during the Tokachi-Oki 2003 tsunamigenic earthquake.

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