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**The sea and ocean 3D acoustic waveguide: rays dynamics and
chaos phenomena**

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It has been carried out modeling of the sea and ocean 3D acoustic waveguide. On the basis of Hamiltonian equations of rays it is studied a dynamics of rays. It has been shown that for acoustic waveguide in a shallow sea with non-level bottom under the rays propagation in a waveguide dependence of the of temporal frequency upon the output angle represents a fractal measure in accordance with Abdullaev-Zaslavsky result. For the ocean 3D acoustic waveguide on the basis of solving the eiconal equations in the Hamiltonian form it has been studied the fractal dynamics, including the chaotic one. There are presented the data of numerical solution of equations for the typical acoustic channel in the North-Atlantic region. The conditions for the Arnold diffusion effect realization are discussed.