ON BLOWUP OF GRAVITY-GYROSCOPIC WAVES WITH NONLINEAR SOURCES AND SINKS ON THE BOUNDARY

M. O. Korpusov

In the article, we consider the equation of internal gravity-gyroscopic waves in an exponentially stratified fluid whose model is the great oceans. We study the case in which a fluid occupies a bounded domain and a boundary condition of the third kind is imposed on the boundary. All sinks and sources localized on the boundary are taken into account. The local solvability of the problem in a weak generalized sense is established and sufficient conditions of finite time blowup of solutions are exposed.

Key words and phrases: blowup, nonlinear analysis, internal waves, nonlinear hydrodynamics, nonlinear boundary conditions.

Korpusov Maksim Olegovich
  Moscow State University,
  Moscow, 119991 Russia.
  E-mail: korpusov@gmail.com