Properties of the Rotating Stratified Flows in a Layer Adjacent to the Bottom of the Ocean

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We construct a solution for a system of Ocean dynamics which describes rotating stratified viscous flows near the bottom of the Ocean in a layer of finite depth.
For viscous fluid, we obtain a unique explicit solution.
For inviscid fluid, we find the spectrum of internal waves and establish its structure. We construct a Weyl sequence for the essential spectrum, which is an explicit representation of non-uniqueness and resonance effect of the solution.
The localization of the essential spectrum may be used for bifurcation points where small nonlinear solutions arise.

Keywords: Ocean dynamics, Internal waves, Rotating fluid