

Two formulations for acoustic and surface waves in a free-surface, vertically stratified ocean

jeudi 21 mars 2024 14:30 (30 minutes)

I will present two formulations for a linear model describing the propagation of acoustic and surface gravity waves in a free-surface, stratified ocean. The first formulation, already studied in previous works, is obtained by the linearization of the compressible Euler equations, written in Lagrangian coordinates. The second formulation uses a new variable which can be understood as a generalized potential, allowing for a natural decomposition into rotational and irrotational velocity components. I will show that both formulations are well-posed and present some simulations.

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