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Non-hydrostatic effects on the steep continental slope

Wednesday, 29 January 2020 14:00 (30 minutes)

The penetration of density inflows on the steep continental slopes plays an important role in the formation of its various characteristics, including the renewal of deep waters in deep-sea, their saturation with oxygen, the renewal of intermediate deep waters, the formation of vertical density stratification, the processes of convection, the trajectory and intensity of the flow of salt waters and some others. Despite the importance of these processes, their realistic modelling is fraught with several difficulties. One of which is the difference in the dynamic distribution of narrow and thin bottom water masses in comparison with the dynamic of the background fluid. The commonly used hydrostatic modelling approaches (primitive equations) are unable to reproduce with due accuracy the dynamic processes that arise on bathymetric features when vertical acceleration cannot be neglected. Under these conditions, hydrodynamics in such regions requires more complete non-hydrostatic equations.
Estimates of the role of non-hydrostatic correction on the slope dynamics are presented by comparison with hydrostatic approximation.

Do you need an official invitation letter?

No

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