عنوان مقاله:

Simulation of entrainment near a density stratified layer: Laboratory experiment and LIDAR observation

محل انتشار:

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خلاصه مقاله:

In this paper a simple qualitative model of the growth of a mixed layer adjacent to a uniform layer with a stably stratified layer is presented. The depth variations of mixed layer can be estimated from direct measurements. The Entrainment of a stably stratified layer into a turbulent mixed layer in a confined region was studied in laboratory for different Richardson numbers. The internal waves generated at the interface propagate into the stratified fluid. The modal structure of these waves appears to interact with the turbulence processes near the interface creating a non-uniform entrainment rate usually in steps. This may be related to the vertical wave number of the dominant wave which is dependent on the depth of the stratified layer as well as the horizontal cross section of the tank. Also applicability of this work for the atmospheric boundary layer, its growth and the entrainment zone was considered as the aerosol backscattering from the convective boundary layer shows spatial variations due to non-uniform mixing of .the naturally occurring aerosol near the entrainment zone

کلمات کلیدی:

Atmospheric mixed layer depth, Entrainment zone, Laboratory experiments