



## Abstract View

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# Richardson Number Statistics in the Seasonal Thermocline

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### ABSTRACT

Statistics of Richardson number in the seasonal thermocline are determined for a simple model and from experiments over the continental shelf. The model consists of normally distributed and uncorrelated density gradient and shear (such as may be caused by an internal wave field) plus a mean shear. It is shown that the most probable Richardson number may be much lower than the Richardson number based on the mean density gradient and shear.

The distributions of Richardson number for two experiments in the seasonal thermocline in Bass Strait, between mainland Australia and Tasmania, are determined from a probe that samples velocity and temperature differences at 1 Hz, over vertical separations of 1 m. Away from surface wave frequencies the data are shown to be adequately described by the above model. In both interfaces significant shear energy occurs above the maximum Brunt-Väisälä frequency of about 0.01 Hz. Judged by the temperature inversions of scales greater than one meter that were observed within the less stable interface, this shear variance leads to Richardson numbers that are subcritical for significant periods.

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