

Closure scheme for stably stratified turbulence without critical Richardson number

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The purpose of this communication is to present a derivation of the non-dimensional vertical gradients of the mean wind speed and mean potential temperature expressed in terms of the so-called similarity functions for very stable conditions of the atmosphere where theoretical approaches provide conflicting results. The result is based on the analysis of the second-order model equations in the boundary layer approximations in which new heat flux equations are proposed. The model employs a recent closure for the pressure-temperature correlation, avoiding the issue of a critical threshold for the Richardson number.

References

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