



Is there a critical Richardson number?

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A large set of laboratory, DNS and LES data indicate that in stably stratified flows turbulent mixing exists up to Ri of order 100, meaning that there is practically no $Ri(cr)$. On the other hand, traditional local second-order closure (SOC) models entail a critical $Ri(cr)$ of order 1 above which turbulence ceases to exist and are therefore unable to explain the above data. In this work, we suggest a simple modification of the recent SOC of Cheng et al. (2002) that reproduces the data for arbitrary Ri .