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## Large organized structures in stably stratified turbulent shear flows.

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We analyzed the data of the numerical simulation of stably stratified turbulent shear flows. It is shown that, along with chaotic turbulence, the flows contain large organized structures. In the temperature field, these structures appear as inclined layers with weakly stable stratification, separated by very thin layers with large temperature gradients. The existence of such layered structures in nature is indirectly confirmed by the analysis of field measurements. An increase of the turbulent Prandtl number with increasing gradient Richardson number was fixed in simulation data. The hypothesis is proposed that physical mechanism for maintaining of turbulence in supercritically stable stratification is connected with the revealed structures. It is shown that the spatial scales and the shapes of the identified organized structures can be explained using the calculation of optimal disturbances for the simplified linear model.

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