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Upward and downward transfer of energy in rotating stratified flows ERNESTO HORNE, MOHAMMED HUSSEIN HAMEDE, JEAN-MARC CHOMAZ, PAUL BILLANT, LadHyX, CNRS, Ecole Polytechnique, F-91128 Palaiseau CEDEX, France, GEOPHYSICAL FLOWS TEAM — We investigate experimentally and numerically the evolution of forced turbulence in the stronglystratified regime and for rotation rates covering the regimes associated to a direct and an inverse energy cascade. The experiments are performed by means of a rotating table with a diameter of 2m. The energy is injected by periodically creating columnar dipoles. Direct numerical simulations (DNS) complement the experiments in order to reach higher Reynolds numbers. The turbulence exhibits pancake structures with a large horizontal scale and a vertical thickness increasing with the rotation rate. Forstrong enough rotating rates, horizontal scales larger than the forcing scales appear in the provide that the critical Rossby number below which the inverse cascade appears on the horizontal Froude number F_h .

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