



Experiments on rotating flows: impact of rotation on flow through tilted rectangular ducts

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In nature, flows can turn unstable and generate waves. Depending on circumstances, these waves may in turn retard or accelerate these flows. The importance of rotation on this process is studied. This is done by pumping fluid through a rectangular duct that is put on a rotating platform, and by measuring, for given pump and rotation rates, cross-channel pressure difference as well as through flow. The experiments delineate the regime in which a (quasi) geostrophic flow establishes itself. When the flow passes the rigid-lid duct, instabilities develop that lead to inertial waves. Depending on a lateral tilt of the duct, these waves may or may not be focused onto a simple-shaped wave attractor, which have an impact on the through flow.