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Jacob P Bedrossian* (jacob@cscamm.umd.edu). *Nonlinear echo cascades in fluids and plasmas.*

Incompressible fluids and weakly collisional plasmas near certain kinds of equilibria experience a resonance phenomenon known as an echo. These arise from the interaction between the nonlinearity and the mixing/unmixing driven by the background equilibrium, for example, a shear flow or vortex in the case of fluids. They are considered the primary impediment to mixing and Landau or inviscid damping near these equilibria. We will discuss this resonance in fluids and plasmas and the various mathematical tools that have been developed to deal with them in different settings to deduce positive Landau/inviscid damping results. (Received January 18, 2015)