

Abstract Submitted
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Small scale anisotropy in mixed convective turbulence HALLDÓR EINARSSON, ANDREA SCAGLIARINI, LAHCEN BOUHLALI, ARMANN GYL-FASON, Reykjavik University, FEDERICO TOSCHI, Eindhoven University of Technology — Turbulent convection is present in a variety of naturally occurring flows and engineering applications. Our concern is with mixed convection, where we study the transition from the Rayleigh-Bénard (RB) convection to forced convection in a channel flow. We consider a fully developed turbulent RB cell and at a given time we apply a constant pressure gradient, orthogonal to gravity, to impose the channel flow. We will analyze some proper indicators of small scale anisotropy and focus on how they vary at changing from one regime (dominated by buoyancy) to the other (dominated by forced convection). The results are interpreted in relation to the turbulent structures present in the fluid, their timescale and size. The observations will be linked with recent experimental finding as well as previous numerical and experimental results.

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