



Universidad
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Effects of stable stratification on wall-bounded turbulent flows

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Abstract

Stably-stratified turbulent wall-bounded flows are relevant to many applications in engineering. These flows are characterized by a variation of fluid density in the vertical direction, that often results in strong modifications of the flow patterns by buoyancy. The dynamics of stably-stratified wall turbulence is driven by two competing mechanisms. Vertical motions can extract turbulent kinetic energy from the mean shear but stratification requires them to pay a potential energy toll. Due to the statistical inhomogeneity of wall turbulence, the interplay between these mechanisms can vary significantly with the wall distance in the same flow, specially as the Reynolds number increases. In some cases, the flow even segregates into regions with disparate features, ranging from long velocity streaks in shear-dominated regions to internal gravity waves in buoyancy-dominated regions. In this talk we are going to present results from direct numerical simulations of stably-stratified wall-bounded turbulent flows. Various cases will be presented and discussed, showing the richness and complexity of these flows.

- **DÍA Y HORA: 2 de junio de 2011 a las 12:00 (!!!)**
- **LUGAR: Edificio Sabatini. Aula: 2.3.A05**