

**ESCUELA TÉCNICA SUPERIOR DE INGENIERIA
AERONÁUTICA Y DEL ESPACIO**

**DPTO. DE MATEMÁTICA APLICADA A LA INGENIERÍA
AEROESPACIAL**

Seminario

Turbulent channel flow over deformable walls

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Many researchers studied the flow over complex walls, as found in many engineering and natural flows, in order to understand the effect of such complex boundaries on the flow field and to get inspiration for the design of novel materials able to modify the flow. The ability to design materials with specific properties could lead to novel developments in several fields spanning from aerodynamics to biology, and from chemistry to medicine. I perform numerical simulations of a turbulent channel flow over hyper-elastic walls, and in order to simulate the elastic material, I use a new simulation method for solving fluid-structure interaction problems, where a fully Eulerian formulation on a fixed Cartesian grid is employed. The turbulent flow in the channel is affected by the deformable walls even at low values of elasticity due to the non-zero fluctuations of vertical velocity at the interface that influence the flow dynamics.

Día: Miércoles 5 de junio

Hora: 12:00h

Lugar: Sala Torres Quevedo