

Abstract Submitted
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Streaky 3D Structures in the Boundary Layer JUAN MARTIN, CARLOS MARTEL, Universidad Politecnica de Madrid, DINÁMICA Y ESTABILIDAD NO LINEAL EN INGENIERÍA AEROESPACIAL TEAM — It has been recently shown [Choi, Nature, April 06 - Cossu, PRL, February 06] that 3D streaky structures in the boundary layer can remain laminar longer than the 2D Blasius flow. The aim of this investigation is to study the possibility of promoting these 3D streaky structures via surface roughness, computing them and evaluating the resulting stabilization using the Reduced Navier Stokes equations (RNS). The RNS are derived from Navier-Stokes making use of the fact that two very different scales are present: one slow (streamwise direction) and two short (spanwise and wall-normal direction). The RNS allows us to perform these 3D computations in a standard PC, without using CPU costly DNS simulations.

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