

Abstract Submitted  
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**DNS of turbulent channel flows with boundary roughened with<sup>1</sup>**  
ALBERTO SCOTTI, UNC, Chapel Hill — A method to simulate the effects of a roughened surface on a turbulent boundary layer is introduced. The method is easy to implement, does not increase the numerical overhead of the code and affects the mean velocity in an *a priori* predictable way. A single parameter  $k$  is sufficient to fully characterize the roughness. The procedure has been tested in turbulent channel flows at  $Re_\tau = 1000$ , with roughness heights  $k^+$  spanning the transitional regime. The properties of the rough flow agree well with experimental data.

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Alberto Scotti  
UNC, Chapel Hill

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