

Abstract Submitted  
for the DFD12 Meeting of  
The American Physical Society

**Roughness effects in turbulent channel flow for the transitionally rough regime**<sup>1</sup> KAREN FLACK, MICHAEL SCHULTZ, United States Naval Academy — Skin friction coefficients and roughness functions are presented for sandpaper roughness (220, 320 and 500 grit) throughout the transitionally rough regime from hydraulically smooth to fully rough. The experiments were performed in a 8:1 aspect ratio water channel with a Reynolds number based on channel height range of 12,000 - 280,000. The wall shear stress was determined from the pressure drop in the channel. Mean flow and turbulence statistics were also obtained for the 320 grit sandpaper using a two-component LDV at Karman numbers ranging from  $Re_\tau=1000$  - 6000. The mean flow and turbulence data are compared to smooth wall channel results from experiments and DNS at similar  $Re_\tau$ .

<sup>1</sup>Work supported by the Office of Naval Research

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Date submitted: 25 Jul 2012

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