

Abstract Submitted  
for the DFD14 Meeting of  
The American Physical Society

**Convection of momentum transport events in a turbulent boundary layer** ROELAND DE KAT, BHARATHRAM GANAPATHISUBRAMANI, University of Southampton — Momentum transport in turbulent boundary layers increases drag. Understanding how momentum transport events interact and evolve will allow us to find ways to control them. In this study, we determine the convection of momentum transport events from time-resolved particle image velocimetry measurements in a stream-wise wall-normal plane of a turbulent boundary layer at  $Re_\tau \approx 2700$ . A field-of-view covering approximately  $2 \times 0.5\delta$  with high spatial,  $l^+ = 20$ , and temporal resolution,  $\Delta t^+ = 0.7$ , allows us to determine convection velocities of momentum transport events of range of different sizes for wall-normal locations  $y/\delta = 0.02$  to  $0.47$  ( $y^+ = 60$  to  $1260$ ). In the talk, a detailed description of convection of momentum transport events in different quadrants will be presented.

Roeland de Kat  
University of Southampton

Date submitted: 01 Aug 2014

Electronic form version 1.4