

Abstract Submitted  
for the DFD11 Meeting of  
The American Physical Society

**Active Flow Control on a Low Aspect Ratio Finite Cylinder** EDWARD DEMAURO, CHIA MIN LEONG, MICHAEL AMITAY, Rensselaer Polytechnic Institute — Oftentimes, flow control about bluff bodies is investigated using quasi-2D shapes that ignore end effects, whereas real world objects are finite and thus exhibit significant three-dimensional flow fields. Therefore, synthetic-jets-based active flow control was studied on a finite cylinder of low aspect ratio ( $AR = 3$ ), which incorporates large-scale end effects that must be taken into consideration. Surface pressure measurements indicated that the flow field was significantly modified by the activation of the synthetic jet actuators, when compared to the unforced case. Even with a small momentum input, the synthetic jets induce a large spanwise effect (i.e., along the cylinder span). This large scale alteration of the flow field was confirmed visually using time-averaged stereoscopic PIV measurements in the near wake, showing significant wake narrowing and vectoring, along with changes to vorticity concentrations and turbulent quantities.

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Date submitted: 01 Aug 2011

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