

Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Drag reduction of a streamlined body at incidence using rotating cylinders JAMES SCHULMEISTER, MICHAEL TRIANTAFYLLOU, MIT
— The flow past a streamlined body at incidence is characterized by cross-flow separation that induces large forces and moments. We investigate the use of counter-rotating control cylinders to delay separation and reduce the drag on a streamlined body at incidence in water tunnel experiments. A streamlined body model with rotating control cylinders was fixed at angles of incidence up to 30 degrees in a water tunnel while the forces and moments were monitored. The control cylinders have diameters equal to 10% of the maximum diameter of the streamlined body and are embedded in the model such that part of the circumference is exposed to the flow. The control cylinders are counter-rotated so that the moving surface imparts momentum to the flow, encouraging the delay of cross-flow separation and the reduction of drag.

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Date submitted: 01 Aug 2016

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