Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Periodic bubble formation and ejection for flow over paper PATRICK WEIDMAN, JOHN FARNSWORTH, Univ of Colorado - Boulder — We study the motion of flow over flat paper attached at its leading edge to the floor of a wind tunnel. To allow freedom of angular motion, the leading edge is attached to a small diameter hypodermic tubing free to rotate in its support. Paper of width 8.5 in and density 0.075 g/sq cm was tested in lengths 12, 24, 32.5 in. Increasing the speed forms a steady bubble at the leading edge which at higher speed propagates down the sheet. We document the onset of bubble formation and the average frequency of bubble ejection. Another configuration is to tape the leading edge of the sheet directly to the tunnel floor. Initial results for a 12 in sheet reveal that the bubble forms half-way down the sheet before being ejected.

Patrick Weidman
Univ of Colorado - Boulder

Date submitted: 29 Jul 2017 Electronic form version 1.4