

Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Boundary-layer flow of air over a falling soap film¹ YUNA HATTORI, RORY CERBUS, JULIO BARROS JR., PINAKI CHAKRABORTY, Okinawa Institute of Science and Technology Graduate University — A falling soap film is a well-known experimental setup to realize two-dimensional flows in a laboratory. The soap film is invariably embedded in ambient air, which, in turn, is set to motion due to the falling film. We experimentally measure the velocity profile in the air using Particle Tracking Velocimetry (PTV). We find that the measured velocity profile conforms well to theoretical predictions using boundary-layer approximation. We discuss some implications of our results on the modeling of geophysical flows.

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Date submitted: 31 Jul 2019

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