

Abstract Submitted
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Characteristics and Dynamics of drops emitted from a Taylor cone ANTHONY ZORZOS, KENNETH BREUER, Brown University — We report results from optical characterization of the stream of droplets emitted from the tip of a Taylor cone. We demonstrate the ability to image and track individual droplets emitted from a Taylor cone using fluorescence microscopy, pulsed laser illumination and statistical particle tracking velocimetry (SPTV). Single-exposed images are used to study the dependence of droplet size on flow rate, conductivity and field. Velocity distributions are obtained from analysis of double-exposure images using SPTV. In addition to droplet size and velocity distributions, we present data on the instability of the tip stream and on the formation and subsequent evolution of the spray cone.

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