

Abstract Submitted  
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**Energy-based Classification of Liquid Jet Dynamics: Experiments and Theory** BOWEN LING, ILENIA BATTIATO, San Diego State University — Experiments and dimensional analysis are used to study the dynamics of Newtonian fluid-air jets. Under quasi-static experimental conditions, new periodic phenomena are first captured by image recognition techniques. The former processes can be described through a newly defined dimensionless modified capillary number. We perform fit-free numerical simulations of appropriately simplified Navier-Stokes equations in different dynamical regimes. Results match the corresponding experimental data and are able to capture important dynamic properties of the system, including dripping-jetting and steady-chaos transitions.

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