

Abstract Submitted  
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**Multiple coalescence and pinch off at a fluid interface** FRANCOIS BLANCHETTE, TERRY P. BIGIONI, ERIC I. CORWIN, James Franck Institute, University of Chicago — We investigate numerically and experimentally the dynamics of the coalescence of a drop coming in contact with a horizontal interface. We focus on cases where the drop repeatedly coalesces and pinches off, forming a sequence of progressively smaller drops. We determine the regime in which such a cascade can occur and describe for the first time the details of the mechanism behind multiple coalescence. Viscous damping of capillary waves is found to be crucial in determining whether pinch off will occur or not, despite the fact that only a small fraction of the available energy is dissipated by viscous effects. When pinch off does occur, we also characterize the following bouncing of the residual drop on the oscillating interface.

Francois Blanchette  
James Franck Institute, University of Chicago

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