

Abstract Submitted
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Experimental study of the oscillating interface of a falling drop SUHWAN CHOI, THOMAS WARD, Iowa State University, Department of Aerospace Engineering — The drop interface oscillation generated from detachment from a nozzle due to gravity are experimentally studied. The fluids used in the experiments are glycerol-water mixtures with viscosities ranging from 0.005 to 0.410 Pa s, mineral oil having a viscosity of 0.0270 Pa s, and DI water with viscosity of 0.0009 Pa s. The drop oscillating is taken by fast camera to make observations. For large drops, where the interface relative to a polar angle may be measured, the periodic deformation is plotted as a function of time. For smaller drops we measure the deformation as switching between an oblate and prolate drop as a function of time. The phenomenon is clearly a function of the fluid viscosity but we seek to propose a pinch-off mechanism for understanding the source of the observed oscillations.

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