

Abstract Submitted  
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**Pinch-off Scaling Law of Soap Bubbles** JOHN DAVIDSON, SANGJIN RYU, University of Nebraska-Lincoln — Three common interfacial phenomena that occur daily are liquid drops in gas, gas bubbles in liquid and thin-film bubbles. One aspect that has been studied for these phenomena is the formation or pinch-off of the drop/bubble from the liquid/gas threads. In contrast to the formation of liquid drops in gas and gas bubbles in liquid, thin-film bubble pinch-off has not been well documented. Having thin-film interfaces may alter the pinch-off process due to the limiting factor of the film thickness. We observed the pinch-off of one common thin-film bubble, soap bubbles, in order to characterize its pinch-off behavior. We achieved this by constructing an experimental model replicating the process of a human producing soap bubbles. Using high-speed videography and image processing, we determined that the minimal neck radius scaled with the time left till pinch-off, and that the scaling law exponent was  $2/3$ , similar to that of liquid drops in gas.

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