

Abstract Submitted
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Dynamics of skirting droplets CALEB AKERS, JACOB HALE, DePauw University — It has been observed that non-coalescence between a droplet and pool of like fluid can be prolonged or inhibited by sustained relative motion between the two fluids. In this study, we quantitatively describe the motion of freely moving droplets that skirt across the surface of a still pool of like fluid. Droplets of different sizes and small Weber number were directed horizontally onto the pool surface. After stabilization of the droplet shape after impact, the droplets smoothly moved across the surface, slowing until coalescence. Using high-speed imaging, we recorded the droplet's trajectory from a top-down view as well as side views both slightly above and below the fluid surface. The droplets' speed is observed to decrease exponentially, with the smaller droplets slowing down at a greater rate. Droplets infused with neutral density micro beads showed that the droplet rolls along the surface of the pool. A qualitative model of this motion is presented.

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