

Abstract Submitted
for the DFD15 Meeting of
The American Physical Society

Deceleration of noncoalescing droplets JACOB HALE, DePauw University — Free liquid droplets are observed to glide, or skirt along the surface of a bath of the same fluid, slowing at an exponential rate. The droplet deforms the bath surface creating a dimple which travels along the surface as a wave pulse. Viscous coupling of the droplet and bath surfaces through a thin air film causes a no-slip condition that leads to viscous drag on the bath and perturbs the wave motion of the otherwise free surface. Assuming a linear velocity profile in the bath near the no-slip zone, we show that viscous dissipation in the bath alone accounts for the loss in kinetic energy of the droplet.

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Date submitted: 27 Jul 2015

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