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Ripple Dynamics of Water Entry after Pinch Off AUSTIN MITUNIEWICZ, BRIAN CHANG, MATT CROSSON, SUNGHWAN JUNG, Virginia Tech, BIOINSPIRED FLUID LAB TEAM — Most research concerning water entry of a projectile focuses on splash during impact and air entrainment during descent. Following pinch off, the air cavity shortens and interfacial rippling develops. In this study, we examine ripple formation induced by projectiles of different shapes under varying kinematic conditions. The amplitude and wavelength of these ripples is determined by the geometry and kinematics of the projectile as well as the cavity pressure. Observations of ripple dynamics demonstrate a close in-phase relationship between the force acting on the projectile and the pressure within the air cavity itself.

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