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Crown-splash by a cylinder impact JALIL HASANYAN, SEAN GART, SUNGHWAN JUNG, Virginia Tech — The impact of a droplet onto a liquid bath creates a crown splash of the thin liquid sheet. Similarly, we can observe a crown-splash phenomenon when a rigid hydrophilic cylinder impacts a liquid bath. After the cylinder impacts the air/liquid interface, the liquid sheet splashes upwards and creates a crown-forming instability. However, unlike the drop-generated splash, the solid-generated splash does not expand radially, but stays on the side of the cylinder. In this present study, we examined the vertical splash depending on the cylinder size, impact speed, and liquid properties. Also, the instability of the leading edge of the splash is characterized and compared with capillary instability theories.

Jalil Hasanyan
Virginia Tech

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