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**Comparison of splashing of low- and high- viscosity liquids** CACEY STEVENS, ANDRZEJ LATKA, SIDNEY NAGEL, The James Franck Institute and Department of Physics, University of Chicago — The splash of a liquid drop on a dry surface was shown to be suppressed at low ambient air pressure [1–3]. However the mechanism by which air causes a drop to splash remains unresolved. This is further complicated by the finding that there are two distinct splashing regimes that depend on the viscosity of the liquid. Accordingly, we determine the evolution of splashing at both low and high viscosities. A high-viscosity drop splashes by emitting a thin sheet of liquid from the spreading drop long after it has first contacted the solid. This film subsequently breaks up into smaller droplets to form the splash. We have found that there is also a delay in the ejection of a thin sheet when a low-viscosity drop splashes. This suggests a common mechanism of delayed thin sheet ejection for splashing in both viscosity regimes. We also show how the ejection time of the thin sheet depends on liquid viscosity and ambient air pressure. [1] L. Xu, W. W. Zhang, and S. R. Nagel, Phys. Rev. Lett., 94(18), 184505 (2005). [2] L. Xu, Phys. Rev. E, 75(5), 056316 (2007). [3] A. Latka et. al., Phys. Rev. Lett., 109(5), 054501 (2012).

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