

Abstract Submitted  
for the DFD15 Meeting of  
The American Physical Society

**Splash of a liquid drop on a dry solid surface** SHRUTI MISHRA, Harvard University, SHREYAS MANDRE, Brown University, CHRIS RYCROFT, Harvard University, MICHAEL BRENNER, [brenner@seas.harvard.edu](mailto:brenner@seas.harvard.edu) — We study the early-time fluid mechanical phenomena of the splash of a liquid drop on a solid surface, focusing on the dynamics before contact through the intervening air layer. Previous theoretical work (e.g. Mani, Mandre and Brenner [Journal of Fluid Mech., (2010), vol. 647, pp. 163185]) on this problem neglected viscous effects in the liquid. However, a set of recent experiments show definitively that even at early times viscous effects in the liquid are important, and in particular have the ability to dramatically change the shape of the interface before contact. We describe a set of computations aimed to reproduce these experimental features. The simulations couple lubrication flow in the gas layer with nonsteady Stokes flow in the liquid, and surface tension at the liquid-air interface.

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Date submitted: 01 Aug 2015

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