

Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Numerical simulation of droplet splashing over varying thin liquid film.¹ AMARESH DALAL, JAI MANIK, GANESH NATARAJAN, Indian Inst of Tech-Guwahati — Droplet impact on wet surfaces is observed in various industrial processes and natural phenomenon. Behavior of droplet impact over thin liquid film is a complex phenomenon involving strong interface deformations. In the past, various studies have been performed to investigate the dynamic behavior of droplets using different geometries and physical conditions. But all the studies were primarily with constant film thickness. The present work is focused on the deformation of single and multiple droplets falling over thin liquid film with variable film thickness. The varying thicknesses of the film may be achieved by considering a sinusoidal varying bottom wall of two different amplitudes. It has been observed that the velocity with which the crown is spreading actually get decreased with the increase in the amplitude of the sinusoidally varying film. Similar behavior has been observed irrespective of the location of drop fall i.e. either falling over crest or over the trough. Also it has been noted that, in the case when droplet is falling over crest, the thickness of the lower portion of the crown rim also gets increased with the increase in amplitude of the film.

¹This Study is funded by a grant from BRNS, DAE, Government of India.

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Date submitted: 01 Aug 2016

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