

Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Impact and bouncing of a liquid onto an inclined wet surface

TRISTAN GILET, JOHN BUSH, MIT — We report the results of an experimental investigation of the impact of droplets onto a solid planar surface coated with a thin layer of high viscosity silicon oil. Particular attention is given to deducing criteria for bouncing, and elucidating the energetics of impact. The viscosity, size and impact velocity of the droplet are varied, as well as the inclination of the surface. The motion is recorded with a high speed camera and the energy transfers are measured by image processing. The principle dissipation mechanisms are discussed, and scaling laws proposed for the parameters characterizing the impact (e.g. coefficient of restitution, contact time, slip length). Our results are compared to those reported in previous studies of bouncing.

Tristan Gilet
MIT

Date submitted: 04 Aug 2010

Electronic form version 1.4