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Droplet Impact on Inclined, Planar Surfaces[1] G. PAUL NEITZEL, PHARES CARROLL, Georgia Institute of Technology — The impact of a liquid droplet on a planar surface is of interest in a variety of applications ranging from droplet-impingement cooling to forensic blood-spatter analysis. An experimental system capable of generating liquid droplets of varying diameters and velocities of relevance to the latter of these applications has been developed for use in an educational context by secondary-school students. Experiments have been performed to quantify droplet patterns corresponding to several relevant dimensionless parameters, i.e., the Weber number, contact angle, impact/inclination angle, and roughness ratio. Results show that characteristics of droplet collisions, namely the eccentricity of the splash zone and creation of spines from a droplet's corona, can be attributed to and predicted by these dimensionless parameters for the range of inclination angle, Weber number, and impact surfaces included in the present study.

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G. Paul Neitzel
Georgia Institute of Technology

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