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**Droplet Impact Onto A Flat Plate: Inclined Verses Moving Surfaces** SCOTT TSAI, JAMES C. BIRD, HOWARD A. STONE, School of Engineering and Applied Sciences, Harvard University — Much research has been conducted on the impact of droplets normal to flat surfaces. However, very little research has been carried out on oblique impacts, even though they occur frequently in nature and industry. We experiment with the effects of tangential and normal impact velocities on the behavior of a droplet as it impacts a flat plate. The plate is inclined in the first case, and in the second case the plate is rotated via an electric motor. The asymmetric nature of the impact causes asymmetric splashing, such that under certain conditions only part of the rim splashes. Using a high-speed camera, we demonstrate that the splash threshold of inclined and moving surfaces are quantitatively similar, with only small differences. We also develop a phase diagram of splashing showing which phase occurs given a tangential and normal impact velocity. Such a phase diagram is useful for both engineering design and for the evaluation of splash-prediction models.

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