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**Dynamics of water droplet on a superhydrophobic carbon nanotube array**[1] ADRIANUS ARIA, CHRISTINA SHU, ANIRBAN GHOSH, MORTEZA GHARIB, Caltech — Among diverse types of superhydrophobic materials, arrays of vertically aligned carbon nanotube have attracted significant attention, mainly because of their exceptional properties. In this study, we look at the dynamic behavior of water droplet upon impact on the carbon nanotube array and subsequent primary rebound at wide range of Weber number. At small Weber number, the water droplet deforms and bounces off completely of the array, while at large Weber number, the water droplet splashes with fingering patterns. Our study shows that no pinning of the water droplet is observed on the array at both small and large Weber number, confirming that the water droplet does not have the capability to wet the array even at high impact velocity. In addition, the coefficient of restitution and spread factor of the bouncing and splashing water droplet will be discussed, along with the critical Weber numbers which predict when the droplet start to split and splash.

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