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Droplet impact on an elastic beam; a leaf-raindrop system SEAN GART, DANIEL CHIQUE, SUNGHWAN JUNG, Virginia Tech, BIOLOGICALLY INSPIRED FLUIDS LAB TEAM — We investigate a leaf-drop system exhibiting a unique system of coupled elasticity and drop dynamics by studying water droplet impact on an elastic cantilever beam with a wettable and non-wettable surface. We found that wettable beams experience much higher torque and bending energy than non-wettable beams. This is because a drop sticks to a wettable beam and rolls off of a non-wettable beam. Simple analytical models can explain the difference in bending energy and torque of wettable and non-wettable beams, which is verified with experimental observations.

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