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Bouncing of a Hydrophobic Bead on Water JEREMY GORDON, Massachusetts Institute of Technology, DAVID QUERE, ESPCI, JOHN BUSH, GARETH MCKINLEY, Massachusetts Institute of Technology — We present the results of an experimental study of hydrophobic solids impacting the free surface of water. Despite the beads being more dense than water, a variety of behaviors was observed, including sinking, floating and bouncing free of the surface. Beads of several materials and sizes were coated with super-hydrophobic Lycopodium spores and dropped onto the free surface of water at a range of impact velocities. Particular attention was given to elucidating the dependence of the system on the governing parameters, namely both the Weber number and the Bond number, and rebounds were shown to occur only over a limited range of these parameters.

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