

Abstract Submitted  
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**Drop impact on sand: from donut to pie** GILES DELON, GRASP-Optofluidics, STEPHANE DORBOLO, NICOLAS VANDEWALLE, GRASP, HERVE CAPS, GRASP-Optofluidics — We have studied the impact of water drops onto granular layers. Depending on the impact energy, various shapes are observed for the resulting craters. Experimental parameters that have been considered are : the size of the millimetric droplets; the height of the free fall, ranging from 1.5 cm to 100 cm; and, the depth of the granular layers, ranging from tenth of millimeters to a few centimeters. As the drop is impacting the sand layer, energy is dissipated and a splash of sand occurs. Meanwhile, surface tension, inertia and viscosity compete, leading to strong deformations of the drop which depend on the experimental conditions. Just after the drop enters into contact with the sand, imbibition takes place and increases the apparent viscosity of the fluid. Soon, the drop motion is stopped by this process. Images and fast-video recordings of the impact allowed us to draw scaling laws for the crater morphology and size.

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