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Water drop dynamics on a granular layer CORALINE LLORENS, ANNE-LAURE BIANCE, CHRISTOPHE YBERT, CHRISTOPHE PIRAT, ILM UMR5306 Universite Lyon1, LIQUIDS AND INTERFACES TEAM — Liquid drop impacts, either on a solid surface or a liquid bath, have been studied for a while and are still subject of intense research. Less is known concerning impacts on granular layers that are shown to exhibit an intermediate situation between solid and liquid. In this study, we focus on water drop impacts on granular matter made of micrometer-sized spherical glass beads. In particular, we investigate the overall dynamics arising from the interplay between liquid and grains throughout the impact. Depending on the relevant parameters (impact velocity, drop and grain sizes, as well as their wetting properties), various behaviors are evidenced. In particular, the behavior of the beads at the liquid-gas interface (ball-bearing vs imbibition) is shown to greatly affect the spreading dynamics of the drop, as well as satellite droplets formation, beads ejection, and the final crater morphology.

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