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Disk impact on an oil-water bilayer DEVARAJ VAN DER MEER, IVO PETERS, MATTEO MADONIA, DETLEF LOHSE, University of Twente —
When a round disc impacts on a water surface, a cavity is created that collapses under the influence of hydrostatic pressure. This leads to the formation of two jets that originate from the pinch-off point, one shooting upwards, the other downwards. To investigate the mechanism by which the jets are formed, we add a thin layer of oil on top of the water surface and repeat the experiment. Initially, just after the pinch-off of the cavity, the jet consists exclusively of oil. At a later stage, we observe that water enters into the jet, but a stable core of oil remains that extends all the way down into the bulk of the liquid. We compare our findings to several theoretical models from the literature.

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