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Impact of raindrops on oil slicks at the surface of the ocean. MOHAMED GHANDOUR, ANNIE-CLAUDE BAYEUL-LAIN, Arts et Metiers ParisTech, OLIVIER COUTIER-DELGOSHA, Virginia Tech — This work is devoted to the analysis of the impact of a raindrop on oil slicks at the surface of water. It is focused on high energy splash regimes, caused by the impact of large droplets at high velocity. The GERRIS opensource solver is used to perform three-dimensional simulations of the impact. The capabilities of octree adaptative mesh refinement enable to capture the small-scale features of the flow. A post-processing of the results has been developed to identify each object resulting from the splash and characterize their evolution in time. The various mechanisms involved, such as the crown formation above the cavity created by the impact, the ligaments emanating from the rim at the top of the crown, and the downward liquid jet that pierces through the bottom of the cavity, are analyzed and discussed, with a specific focus on the inception of azimuthal instabilities.

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