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Impulsive water bells ARNAUD ANTKOWIAK, CHRISTOPHE JOSSERAND, STÉPHANE ZALESKI, Université Pierre et Marie Curie, Institut d'Alembert, Paris, EMMANUEL VILLERMAUX, Université de Provence, IRPHÉ, Marseille — The impact of a liquid half-sphere located on a falling rigid rod is considered. Following the impact, the drop is strongly deformed into a liquid sheet evolving into the impulsive analogue of Savart's waterbell. We investigate the dynamics of this drop impact model by deriving the initial velocity field within the drop. Interestingly enough, it appears that viscosity plays a major role in the initial development of the liquid film. This behaviour is confirmed by detailed experiments conducted with high-speed video recording and numerical simulations. The subsequent development of the liquid layer, its ejection angle and ultimate formation of the waterbell is considered as well.

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