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Size of the top jet drop produced by bubble bursting ALEXIS BERNY, Institut d'Alembert, UPMC, Paris, LUC DEIKE, Department of Mechanical and Aerospace Engineering, Princeton Environmental Institute, Princeton University, STPHANE POPINET, THOMAS SEON, Institut d'Alembert, CNRS UPMC, Paris — When a bubble is located on a liquid-air interface, it eventually bursts. First, the bubble cap shatters and produces film drops. Then, the cavity collapses, a tiny liquid jet rises and, depending on bubble radius and liquid parameters, it can eventually break-up and release the so-called jet drops. We perform numerical simulations, using the free software basilisk, to determine and discuss the regime of existence and the size of the first liquid jet droplets. We first validate the numerical scheme by comparing our results with recent experimental data. We then extend our numerical study to a wider range of control parameters in order to enrich our knowledge of the jet drops production. Finally, we show and interpret our results using a scaling law approach and basic physical arguments. This allows us to untangle the intricate roles of viscosity, gravity, and surface tension in the end pinching of the bubble bursting jet.

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