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The formation of soap bubbles created by blowing on soap films LOUIS SALKIN, ALEXANDRE SCHMIT, PASCAL PANIZZA, LAURENT COURBIN, IPR UMR CNRS 6251 - Université de Rennes I — Using either circular bubble wands or long-lasting vertically falling soap films having an adjustable steady state thickness, we study the formation of soap bubbles created when air is blown through a nozzle onto a soap film. We vary nozzle radius, film size, space between the film and nozzle, and gas density, and we measure the gas velocity threshold above which bubbles are generated. The response is sensitive to confinement, that is, the ratio between film and jet sizes, and dissipation in the turbulent gas jet which is a function of the distance from the nozzle to the film. We observe four different regimes that we rationalize by comparing the dynamic pressure of a jet on the film and the Laplace pressure needed to create the curved surface of a bubble.

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