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Thermal plumes in locally heated vertical soap films NICOLAS ADAMI, STÉPHANE DORBOLO, HERVÉ CAPS, Université de Liège, GRASP TEAM — A vertical soap film is maintained by injection of a soap solution from the top. The film is then locally heated. Thermal plumes may be observed to rise in the film, depending on the magnitude of the heating and injected flows. The nearly-2D nature of the system allows to visualize the motion of the plumes using an infrared camera. A model is proposed to describe the growth, emergence, and stationarity of the plumes in the film by taking into account both magnitudes of the heating ΔT and injected flow Q. Oscillatory behaviors of both the full-grown plumes size and direction with respect to the vertical direction may also be observed. Particular soap film thickness dynamics shows to be the origin of those phenomena.

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