

SELF-SIMILAR COALESCENCE OF LIQUID LENSES

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We present a study of the coalescence of liquid lenses, e.g. drops floating on a liquid pool. High-speed imaging is used to experimentally study the initial stages of coalescence. These experiments reveal that the bridge connecting the two lenses exhibits a self-similar growth, in both the viscous and inviscid regimes. The results are compared to similarity solutions for the bridge shape, derived from the one-dimensional thin sheet equations. This is complemented by numerical simulations that provide a detailed picture of the flow inside the lenses.

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