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Anatomy of a wave JÉRÔME HOEPFFNER, RALF BLUMENTHAL,
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Pierre et Marie Curie, Paris — A perturbation is induced at the sheared interface
between a stream of liquid and a stream of gas. This initial perturbation then evolves
as the response of inertia, viscosity and interfacial tension. We observe that the wave
obtained by this procedure tends to a self-similar regime after a short transient. We
describe the anatomy of this well-defined growing wave as the physical parameter
are varied, in particular as the density ratio of the two phases is changed. This study
is aimed at identifying a possible recurrent agent in atomization processes.

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