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**Life and death of a particle-laden liquid sheet** PASCAL RAUX,  
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Recherche/CNRS UMR 125 — Thin films of suspensions are involved in many industrial processes, such as surface coating or liquid transport in tubes. For dilute suspensions, it is well known that the particles increase the effective viscosity. However, this only holds in the continuum approximation, and should fail in a confined situation such as a liquid sheet. Here, we investigate the dynamics of a thin film of suspension, formed upon the impact of a suspension drop. We show that the atomization process varies when the thickness of the liquid film is smaller than the particle size, leading to a loss of stability of the sheet. Our results highlight the influence of capillary effects in this confined flow.

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