

Abstract Submitted  
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**Wetting and partially wetting rivulets: the role of Reynolds number and boundary conditions** PETER VOROBIEFF, NIMA FATHI, The University of New Mexico, VAKHTANG PUTKARADZE, University of Alberta, KEITH MERTENS, LeapMotion.com — The behavior of gravity-driven rivulets flowing down an inclined plane or confined between two vertical planes has attracted considerable recent attention. We present a study of several fluids with different wetting properties in both of these arrangements, and discuss the effects of changes in the boundary conditions and the flow rate (both in terms of average Reynolds number and variability). Our experimental arrangement allows to introduce or eliminate fluctuations in the discharge that drives the rivulet, which leads to changes in the flow patterns we observe, including transitions between different flow regimes. For the case of the flow between two vertical planes, one of these regimes manifested for a partially wetting stream exhibits particularly interesting and visually striking features.

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