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Hydraulic jumps in a narrow channel ANDERS ANDERSEN, TOMAS BOHR, Department of Physics, Technical University of Denmark, DANIEL BONN, van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands, FARID BOUAMRIRENE, Laboratoire de Physique Statistique, Ecole Normale Supérieure, France — We present measured free surface profiles of stationary hydraulic jumps in a small open channel. We observe that the position of the jump depends linearly on the flow-rate and that the flow velocity immediately upstream of the jump has only a weak dependence on the flow-rate. We discuss these results and the conditions that determine the occurrence of the jump. We find a linear height profile upstream of the jump region with a slope that is independent of the flow-rate, and we compare our results with the solutions derived by Watson (1964) for laminar and turbulent channel flows.

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