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Symmetric and Asymmetric Coalescence of Drops on a Substrate FEDERICO HERNANDEZ-SANCHEZ, LUUK LUBBERS, ANTONIN EDDI, JACCO SNOELJER, Univ of Twente — The coalescence of viscous drops on a substrate is studied experimentally and theoretically. As a result, a universal shape of the bridge between the drops was found. The dynamics of the bridge is accurately described by similarity solutions of the one-dimensional lubrication equation. Such solutions were found for equal and unequal contact angles of the two drops, and characterized by the ratio of contact angles. Our theory predicts a bridge that grows linearly in time and stresses the strong dependence on the contact angles. Without any adjustable parameters, we find quantitative agreement with all experimental observations. The results reveal the importance of asymmetry on the coalescence process.

Federico Hernandez-Sanchez
Univ of Twente

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