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Interaction and coalescence of two bubbles rising in a Hele-Shaw cell at high Reynolds numbers PATRICIA ERN, SANDER HUISMAN[1], VERONIQUE ROIG, Institut de Mecanique des Fluides de Toulouse, France — We investigated the relative motion and deformation of two large bubbles released consecutively in a quiescent liquid confined in a thin-gap cell using a high-speed camera and image processing. Though the second bubble injected is smaller, we observed that in all cases it accelerates and catches up with the leading bubble. This acceleration is related to the wake of the leading bubble which also induces important changes in width and curvature of the trailing bubble. On the contrary, the velocity of the leading bubble is unaltered during the interaction. Shape adaptation of the two bubbles is observed prior to coalescence: the shape of the two bubbles together closely resembles a single large bubble. After the interfaces touch, the liquid film is drained at a constant velocity.

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