

Abstract Submitted  
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**Measurements of liquid film thickness for a droplet at a two-fluid interface** GOSSE OLDENZIEL, FOM, Delft University of Technology, JERRY WESTERWEEL, RENE DELFOS, Delft University of Technology — Coalescence of a droplet at a two-fluid interface is studied at Bond numbers larger than one and at three different values of the viscosity ratio. Both the thickness of the liquid film between the rising droplet and the two-fluid interface, and the location of film rupture are measured using Laser Induced Fluorescence. Particle Image Velocimetry was applied to the flow in the film. It is found that the film thins asymmetrically, and that the time interval between collision and film rupture is shorter than predicted by commonly used models. The film ruptures at an off-center location. It can be concluded that asymmetric film drainage speeds up coalescence.

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