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Partial and total coalescence of drops in presence of a surface FRANCOIS BLANCHETTE, Sch. Natural Sciences, U.C. Merced, LAURA MESSIO, JOHN BUSH, Mathematics Dept, M.I.T. — The coalescence of a drop with a liquid reservoir of a different fluid is investigated numerically and experimentally. Drops are gently deposited on the surface of the reservoir and coalesce with negligible initial vertical velocity. Depending on the drop size and reservoir composition, partial or total coalescence may occur. The difference in surface tension between the drop and the reservoir is of particular importance in determining the type of coalescence observed through the tangential motion it generates (Marangoni effect). If the surface tension of the drop is much larger than that of the reservoir, a new type of coalescence occurs: a droplet is ejected from the top of the drop, while satellite droplets are left in its wake. These regimes are delineated numerically or experimentally.

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