Abstract Submitted
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A droplet of spectroscopy[1] DENIS TERWAGNE, TRISTAN GILET, NICOLAS VANDEWALLE, STÉPHANE DORBOLO, GRASP-Photopôle, University of Liège, Belgium — Droplet coalescence in a liquid bath can be delayed by oscillating the surface of the bath vertically (frequency from 20 Hz to 400 Hz), the droplet bounces on the interface [1,2]. A low viscous oil droplet is dropped on a high viscous oil bath. We observe that the conditions for bouncing depends on the frequency, more precisely we observe resonance when the eigenfrequency of the droplet is excited. In some conditions, droplet presents a non axi-symmetric mode of deformation. That leads to a rotation of the drop and to a horizontal displacement.
[1] Y. Couder, E. Fort, C. H. Cautier and A. Boudaoud, Phys. Rev. Lett. **94**, 177801 (2005)
[2] N. Vandewalle, D. Terwagne, K. Mulleners, T. Gilet and S. Dorbolo, Phys. Fluids **18**, 091106 (2006)

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Denis Terwagne
GRASP-Photopôle, University of Liège, Belgium

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