

Abstract Submitted  
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**The mayonnaise droplet**<sup>1</sup> DENIS TERWAGNE, TRISTAN GILET, NICOLAS VANDEWALLE, STÉPHANE DORBOLO, University of Liège, GRASP-PHOTOPOÛLE/PHYSICS DEPARTMENT TEAM — A compound drop is made of a millimetric water drop encapsulated by an oil shell. They are obtained by merging one drop of each component (water and oil). Afterwards, they are laid on a high viscosity oil bath which is vertically vibrated. When the forcing acceleration is higher than a given threshold, compound drops can bounce on the surface. We show that above a second threshold some oil contained in the shell enters in the inner water droplet. In a second experiment, we drop the compound droplet on the oil bath at rest. We can determine the range of impact speed in which capillary waves developed on the surface are able to generate an oil drop (coming from the shell) in the water drop. When the bouncing trajectories of the droplets are analyzed a correlation between the emulsion threshold and the static analysis can be made.

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