

Abstract Submitted
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Orbiting droplets on a vibrated bath NARESH SAMPARA, LOIC BURGER, TRISTAN GILET, Univ de Liege, MICROFLUIDICS, UNIVERSITY OF LIEGE TEAM — A millimeter-sized oil droplet can bounce on a vertically vibrated liquid bath for unlimited time. It may couple to the surface wave it emits; leading to horizontal self-propulsion called walking. When several walkers coexist close to one another, they either repel or attract each other, in response to the superposition of the waves they generate. Attraction leads to various bound states, including droplets that orbit around each other. We have experimentally investigated the variety of quantized orbital motions exhibited by two, three and more identical walkers, as a function of forcing acceleration. Each motion is quantified in terms of droplet and wave energy.

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