Floating a boat on the underside of a liquid
3 September 2020, by Bob Yirka

To learn more about what happens when a fluid is levitated by shaking, the researchers partially filled small tubs with either glycerol or silicone oil and then used a shaking device to shake the tub. As expected, the fluids soon rose from the bottom of the tub to hover near the top. But then they pushed a small toy boat through the fluid, turned it upside down, and let it go. To their surprise, the boat moved to a partially submerged position on the underside of the levitating fluid—floating upside down. For added effect, the researchers then placed another boat on top of the fluid, allowing it to float on top. They then filmed the action with a camera that was fixed to the shaking mechanism, allowing for the creation of a video that appeared to show the two boats floating without the up and down movement of the tub—imagery that defies the senses.

The researchers plan to continue their research—they will next try levitating two types of fluids in the same container and also explore what happens when the amount of fluid and the size of the floating objects are varied.


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