The Anatomy of Rainy Sound

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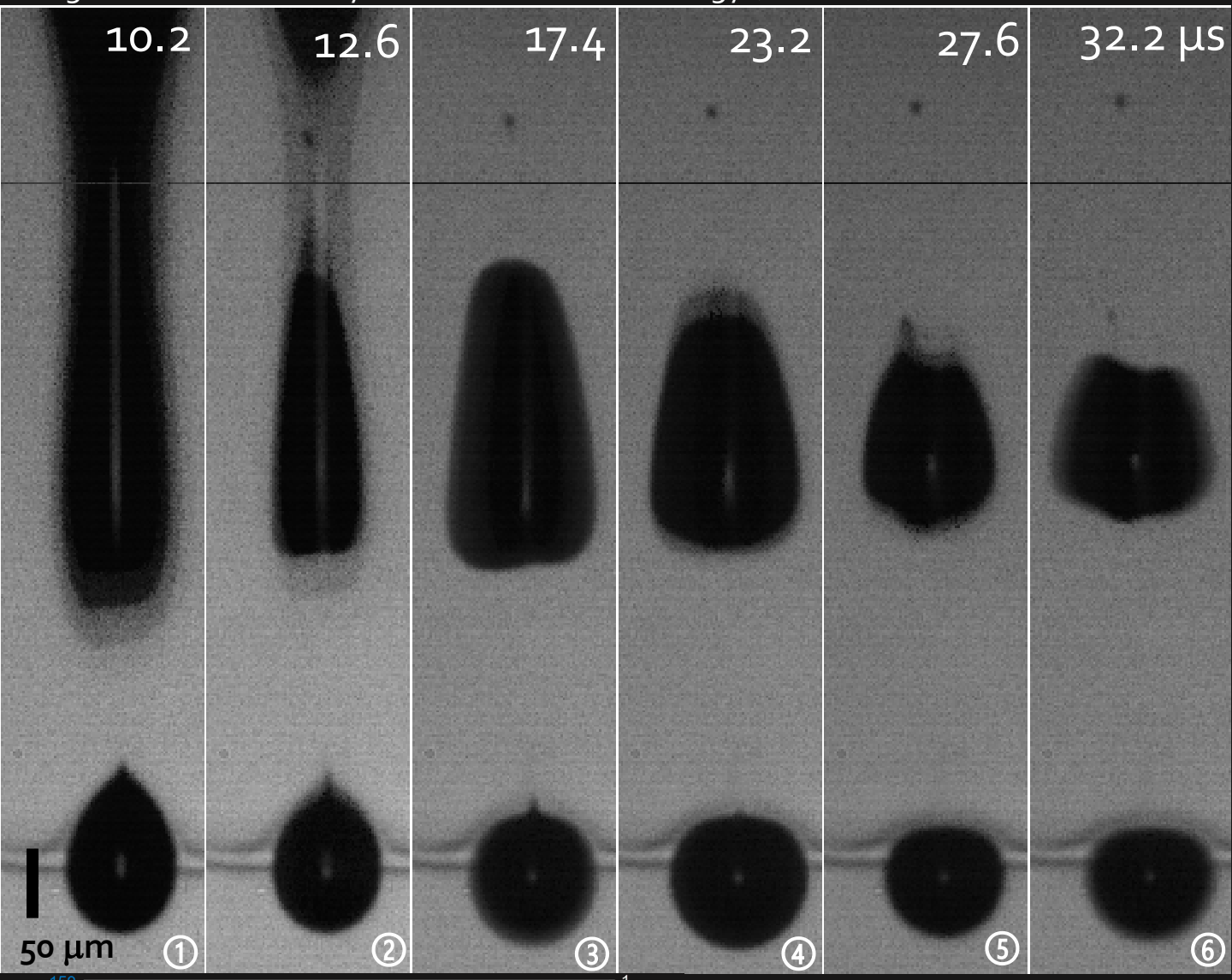

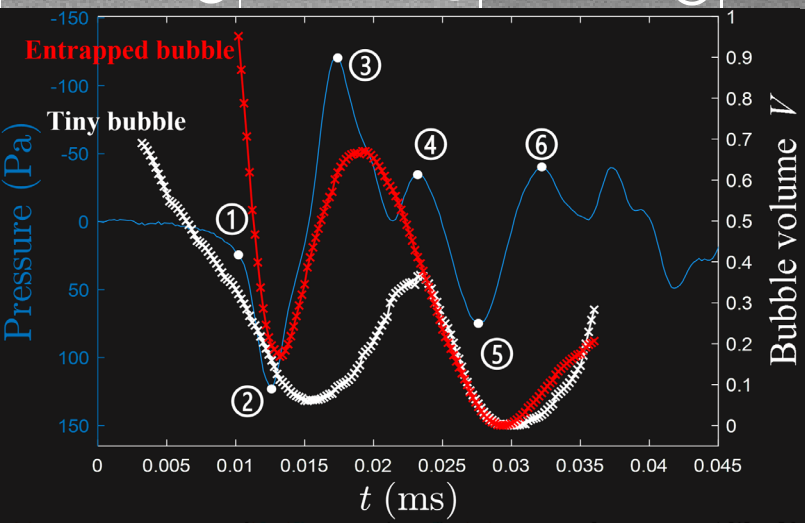

When a drop impacts onto a liquid pool, a bubble can be pinched off from the dimple forming at the bottom of the rebounding crater. This process is related to the underwater sound produced by rain. Herein we study sound emission from such bubbles. To accurately capture the rapid shape evolution, we need frame rates as high as 5 million fps. The **lower tiny bubble** is from initial contact of the drop with the free surface. This bubble is induced to oscillate out of phase with the **larger entrapped bubble**. This explains why the acoustic signal has double peaks during the oscillation process.