

LadHyX Seminar – September 24, 14:00

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Platonic vibrations

Spherical bubbles are good acoustic resonators underwater but are usually difficult to position in space and their volume grows in time. Here, to circumvent these limitations we trapped bubbles within 3D-manufactured millimetric open frames. For simplicity, we chose for the frame shapes the five Platonic solids with identical faces (4 to 20 faces). We thus obtained "Platonic bubbles", featuring liquid/gas interfaces that are free to oscillate. We measured their acoustic vibration under driving, and we observe their resonance frequency obeys a simple formula in spite of the shape complexity. We will end up by discussing the minimum and maximum size of such stabilized but vibrating bubbles.