Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

The resonance of water balloons and water drops[1] CHUN-TI CHANG, National Taiwan University, PAUL STEEN, Cornell University — What happens if a sessile drop is covered with a membrane and mechanically oscillated? In this study, we examine the resonance behaviors of water balloons, and we compare them to those of drops. It turns out that balloons and drops exhibit a variety of similar dynamical behaviors: families of corresponding modes, similar scalings for onset thresholds and almost identical dispersion relations. However, balloons and drops may synchronize differently with the forcing. In this talk, we shall carefully examine different aspects of the resonance of balloons and drops. Ultimate, we shall identify the extent to which one can understand the dynamics of balloons in terms of that of drops.

[1]Ministry of Science and Technology, Taiwan, Grant No. MOST 107-2218-E-002-070-MY3

Chun-Ti Chang
National Taiwan University

Date submitted: 29 Jul 2019 Electronic form version 1.4