

Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Walking droplets in confined domains¹ PEDRO SÁENZ, JOHN BUSH, Massachusetts Institute of Technology — A millimetric liquid drop can walk spontaneously along the surface of a vibrating fluid bath, propelled by a resonant interaction with its own wave field. These walking droplets exhibit features previously thought to be exclusive to the microscopic quantum realm. We here explore experimentally the dynamics and statistics of this macroscopic wave-particle system in confined domains, or ‘corrals’. Particular attention is given to characterizing the influence of the corral geometry on the emergent probability distributions. The relation to analogous quantum systems (specifically, quantum corrals, the quantum mirage and scarring in Bose-Einstein condensates) is discussed.

¹NSF support via CMMI-1333242

Pedro Sáenz
Massachusetts Institute of Technology

Date submitted: 01 Aug 2016

Electronic form version 1.4