Stochastic trajectories of a walking drop in a harmonic potential[1]

MASON BIAMONTE, Massachusetts Institute of Technology, ANAND OZA, New York University, ANDRE NACHBIN, IMPA, Rio de Janeiro, JOHN W. M. BUSH, Massachusetts Institute of Technology —
Droplets walking on the surface of a vibrating fluid bath have been shown to exhibit certain features of microscopic, quantum systems. Their dynamics is reminiscent of modern extensions of de Broglies pilot-wave theory, according to which charged particles interact with a stochastic field. We here present the results of a theoretical investigation of the influence of such a stochastic field on the pilot-wave dynamics of a droplet walking in a simple harmonic potential.

John Bush
Massachusetts Institute of Technology