

## Pilot-wave hydrodynamics: bound states, corrals and the logarithmic spiral

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We present recent experimental and theoretical results that have emerged from MIT. Particular attention will be given to recent experiments involving walker-walker interactions, walker motion in corrals and the interactions of walkers with submerged pillars. Theoretical modeling of the stability of walker bound states reveals the limitations of the stroboscopic model, and prompts model refinements, specifically the inclusion of spatial damping of the pilot wave and wave-amplitude-dependent impact phase variations. The relation between walkers in corrals and Bohmian mechanics in quantum corrals is discussed, and a hydrodynamic analog of projection effects in elliptical quantum corrals is presented. The logarithmic spiral path that emerges when a walker interacts with a submerged pillar illustrates how pilot-wave-mediated local forces can give rise to apparent action-at-a distance.