Nonequilibrium phenomena in superfluid systems: atomic nuclei, liquid helium, ultracold gases, and neutron stars

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Restless neutron stars: timing noise and pulsar glitches

Wednesday 14 May 2025 10:00 (45 minutes)

Superfluidity impacts the dynamics of rotating neutron stars. The presence of superfluids in neutron stars is an important ingredient in models of pulsar glitches, oscillation modes, cooling of old pulsars and, possibly, even timing noise. I will discuss how simulations of quantised vortices can help us to understand how superfluid momentum is transported in neutron stars, and their relevance for the astrophysical phenomena of pulsar glitches and timing noise.

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