

Sesto Incontro Nazionale di Fisica Nucleare



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Glitches in rotating supersolids

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Glitches, spin-up events in neutron stars, are of prime interest as they reveal properties of nuclear matter at subnuclear densities. We numerically investigate the glitch mechanism due to vortex unpinning using analogies between neutron stars and dipolar supersolids. We explore the vortex and crystal dynamics during a glitch and its dependence on the supersolid quality, providing a tool to study glitches from different radial depths of a neutron star. Benchmarking our theory against neutron star observations, our work will open a new avenue for the quantum simulation of stellar objects from Earth.

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