

## Tkachenko mode in rotating superfluid and noncommutative field theory

*Friday, December 5, 2025 11:00 AM (1 hour)*

Online talk - A superfluid rotates by creating a lattice of quantized vortices. The Tkachenko mode is an elastic wave propagating on the vortex lattice with two unusual properties: quadratic dispersion relation and absence of longitudinal polarization. We construct an effective field theory description of the Tkachenko mode using the formalism of noncommutative field theory. Using this theory we derive the decay rate of the Tkachenko mode.

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