Physical Sciences Seminar

Quantum Colloquium | Measuring high-amplitude quantum motion in a nanogram object

Jack Harris
Yale University

Host: Onur Hosten

I will describe measurements of individual phonons in a 1 ng body of superfluid helium. When this body is in equilibrium, its phonon correlations are consistent (up to 4th order) with a thermal state of mean occupancy ~ 1. This purity is preserved even when the mode is driven to a coherent state with an amplitude corresponding to ~100,000 phonons. I will describe how these results can be used to constrain nonlinear extensions of quantum mechanics, and to distribute entanglement over kilometer-scale optical fiber networks.

Tuesday, December 19, 2023 11:00am - 12:00pm
Office Bldg West / Ground floor / Heinzel Seminar Room

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.