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Non-linear kinetic inductance devices for dark matter searches

Tuesday, 7 November 2023 17:30 (15 minutes)

Non-linear kinetic inductance (NLKI) enables engineering sensitive devices that operate at the quantum limit. This talk will cover kinetic inductance traveling wave parametric amplifiers (KI-TWPAs) and spectrometers being developed at JPL and Caltech. With relation to KI-TWPAs we will also showcase a hidden photon search experiment QUantum Limited PHotons In the Dark Experiment (QUALIPHIDE) and outline the plans for expanding to wider mass ranges. Finally, we will briefly review a new class of superconducting spectrometers, e.g. the superconducting on-chip fourier transform spectrometer (SOFTS), and their potential for dark matter searches.

Early Career

Yes

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