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Probing the quantum nature of the neutrino with two-particle interferometry THOMAS D. GUTIERREZ, NU XU, Lawrence Berkeley National Laboratory — One of the primary contemporary problems in neutrino physics is determining if the neutrino is its own antiparticle. That is, is the neutrino a Majorana ($\nu = \bar{\nu}$) or Dirac ($\nu \neq \bar{\nu}$) fermion. Currently, the only experimental approach being used to determine the quantum nature of the neutrino is through neutrinoless double beta decay. In this work, two-particle intensity interferometry, a second-order interference effect, is explored as another possible tool to distinguish between massive Dirac and Majorana neutrinos. A simple theoretical framework is discussed as well as some experimental considerations.

- Prefer Oral Session
 Prefer Poster Session

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