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Non-Standard Neutrino Interactions in COHERENT GLEB SINEV, Duke Univ, COHERENT COLLABORATION — The Standard Model of particle physics and the phenomenological model of neutrino oscillations have described data of most neutrino experiments remarkably well so far; however, some regions of the non-standard-neutrino-interaction (NSI) parameter space remain largely unexplored. Certain currently allowed NSI couplings, if realized, can create ambiguities for measurements of long-sought-after Standard-Model parameters such as neutrino mass ordering in the next generation of neutrino oscillation experiments, making independent NSI measurements valuable to the success of those searches. The COHERENT experiment with its suite of detectors containing germanium, sodium, cesium, iodine, argon (and, potentially, other) nuclei provides a unique opportunity to significantly reduce the NSI parameter space not yet excluded by other experiments. This work presents the current status and the potential of NSI studies using the COHERENT data.

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