Abstract Submitted
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The Noble Element Simulation Technique (NEST)[1] MICHAEL WOODS, University of California Davis, NEST TEAM — A comprehensive model for explaining the mean scintillation and electroluminescence yields in liquid and gaseous noble elements will be presented which informs an exhaustive simulation code called NEST (Noble Element Simulation Technique). All available liquid xenon data on electron and nuclear recoils have been incorporated, and significant progress has been made on extending NEST's applicability to argon. Results will be shown from Geant4 implementations for 1- and 2-phase xenon and argon detectors. The quasi-empirical NEST approach can lead to a better understanding of detector calibrations and performance verification and aid in the design and optimization of future detectors for dark matter or other applications, and assist in the data analysis stage of present detectors.

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