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Impact of Nuclear Form Factors on Supernova Neutrino Detection in LZ DEV ASHISH KHAITAN, University of Rochester, LUX-ZEPLIN COLLABORATION, SNEWS COLLABORATION — LUX-ZEPLIN (LZ) is a direct detection dark matter experiment, currently under construction 4850 ft underground at the Sanford Underground Research Facility in Lead, SD, USA. At the core of the LZ design is a dual-phase liquid Xe time projection chamber (TPC) with a 7 ton active mass. The LZ TPC is optimized to detect low-energy depositions making it sensitive to the neutrino emission from core-collapse supernovae. These neutrinos, with $O(10 \text{ MeV})$ kinetic energy, can interact via coherent elastic neutrino-nucleus scattering (CE ν NS) depositing $O(1 \text{ keV})$ in LZ. This presentation gives an overview of the LZ TPC, presents different CE ν NS nuclear form factors and discusses the impact they have on LZ's sensitivities to these signals.

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