Abstract Submitted
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Characterization of 3x3x10 cm^3 CsI Crystals for Nuclear Physics Experiments[1] SEAN SWEANY, WILLIAM LYNCH, BETTY TSANG, NSCL/Michigan State University, ZBIGNIEW CHAJECKI, Western Michigan University, KYLE BROWN, PIERRE MORFOUACE, ZHU KUAN, JACOB CROSBY, CORINNE ANDERSON, SUHAS KODALI, NSCL/Michigan State University — The symmetry energy portion of the nuclear equation of state is currently poorly constrained in asymmetric nuclear matter. The momentum dependence of the symmetry energy potential causes a reduction in the nucleon masses causing a splitting between the neutron and proton effective masses. From transport simulations, n/p spectral ratios are shown to be a good observable for studying this effective mass splitting. Arrays of silicon strip detectors backed by scintillator crystals are an effective way of detecting and identifying charged particles over a large range of angles. Recently the HiRA group at the NSCL has finished updating of the HiRA array with 10 cm CsI crystals, HiRA10. The longer CsI crystals allow for higher energy particles to be measured. The doping gradient of thallium along with side and surface treatment of CsI can cause nonuniformity in light output of the crystals, therefore the crystals must characterized before use. For characterization, the crystals were scanned using a collimated Am241 source in a grid pattern of 64 points per crystal. The design of HiRA10 as well as the results of the tests for crystal uniformity will be presented in this talk.

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