Abstract Submitted
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Momentum dependence of symmetry energy[1] DANIEL D. COUPLAND, MICHAEL YOUNGS, NSCL/MSU, ZBIGNIEW CHAJECKI, Western Michigan University, WILLIAM LYNCH, BETTY TSANG, NSCL/MSU, YINGXUN ZHANG, China Institute of Atomic Energy, Beijing, China, MICHAEL FAMIANO, Western Michigan University, TILAK GHOSH, VECC, Kalkota, India, B. GIACHERIO, Western Michigan University, MICHA KILBURN, JENNY LEE, FEI LU, NSCL/MSU, PAULO RUSSOTTO, INFN/Catania, ALISHER SANETULLAEV, RACHEL SHOWALTER, NSCL/MSU, GIUSEPPE VERDE, INFN/Catania, JACK WINKELBAUER, NSCL/MSU — One of the main uncertainties in the Equation of State of neutron-rich nuclear matter concerns the density and momentum dependence of the nuclear symmetry energy. Some constraints on the density dependence of the symmetry energy at sub-saturation densities have been recently obtained. However questions remain, especially concerning the momentum dependence of the symmetry mean-field potential that can make the neutron and proton effective masses different. We probe the momentum dependence of this isovector mean-field potential by comparing the energy spectra of neutrons and protons emitted in ^{112}Sn+^{112}Sn and ^{124}Sn+^{124}Sn collisions at incident energies of E/A=50 and 120 MeV. We achieve an experimental precision that can discriminate between transport model predictions for the n/p double ratio for different momentum dependencies of the symmetry mean-field potential.

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