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**Using Light Cluster Production to Explore the Density Dependence of the Nuclear Symmetry Energy** SARAH SOISSON, Texas A&M University, L.W. CHEN, Shanghai Jiao Tong University, E. BELL, S.J. YENNELLO, Texas A&M University, NIMROD COLLABORATION — The production of deuteron, triton, and  $^3\text{He}$  in heavy-ion collisions induced by a neutron-rich nuclei has been studied using a coalescence model for treating cluster production from an isospin-dependent Boltzmann-Uehling-Uhlenbeck(iBUU) transport model. Using this approach, it has been shown that the both the multiplicities and energy spectra of light clusters are sensitive to the density dependence of the nuclear symmetry energy but not to the isospin-independent part of the EOS or the in-medium nucleon-nucleon cross sections. Isotopically identified light charged particles have been measured with the NIMROD detector for reactions of  $^{58}\text{Fe}$  and  $^{58}\text{Ni}$  at 45 MeV/A. The energy spectra and multiplicities of these fragments will be compared with predictions from the iBUU and Antisymmetrized Molecular Dynamics (AMD) theoretical codes.

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