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Constraining neutron star matter with laboratory experiments

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While measurements of nucleus-nucleus collisions have provided significant constraints on the equation of state of symmetric nuclear matter, there are currently no good constraints on the asymmetry term in the nuclear EOS. These constraints are relevant to the understanding of neutron rich astrophysical objects. Heavy ion collisions, which create nuclear matter over a range of density provide an opportunity to study the density dependence of nuclear symmetry energy. The status of present investigations mostly with stable beams will be reviewed. With the development of new facilities for producing energetic rare isotope beams especially those with extreme isospin composition, prospects for future measurements in this area will also be explored. This work is supported by the Nuclear Science Foundation Grant No. NSF-PHY-01-10253.