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Neutron Star Masses, Radii, and the Equation of State of Dense Matter

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Neutron stars provide an exciting laboratory for the physics of matter at extreme densities. In particular, neutron star mass and radius measurements are providing a novel constraint on the nuclear symmetry energy, neutron-rich nuclei, the nucleon-nucleon interaction, and the equation of state of dense matter. I will review current and future neutron star mass and radius observations and their potential systematic uncertainties. Then I will show how these observations provide novel constraints on the nature of matter near and above the nuclear saturation density.