Nuclear Matter Equations of State and the Neutron Stars *

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The equations of state (EoS) of relativistic asymmetric nuclear matter are obtainable from assumed form of the interaction Lagrangian. They are one of important inputs to describe the neutron stars. The structure of the neutron stars, i.e. the density of matter and the pressure as functions of radial distance starting from their values at the center of a star, is straightforwardly dependent on EoS. Similarly, a limitation on the total mass of the neutron star can be obtained therefrom. Thus, EoS and the underlying nucleon interactions can be tested also by the means of astronomical observations.

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