

Hyperonic equation of state for neutron stars at finite temperatures,

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We review the composition and the properties of neutron stars and proto-neutron stars with a nucleonic and hypernucleonic core within a relativistic mean-field approach. We make use of the FSU2H model, which has been updated according to the recent analysis on the Xi baryon potential, and extend it to include finite temperature corrections. The calculations are done at both constant temperature and constant entropy per baryon, thus exploring the different conditions that can be found in proto-neutron stars, binary mergers remnants and supernova explosions. The inclusion of the hyperons dramatically changes the composition of the star. In particular, at large temperatures, the hyperon abundances are significant even at low densities. This can have a strong impact on several astrophysical observables, such as the mass, radius and tidal deformability of the star.

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