

The hyperonic three-body forces in hadronic matter

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We calculate a two-meson exchange three-baryon potential between two nucleons and one hyperon (NNY). Our NNY potential is built in order to be consistent with the two-body nucleon-hyperon (NY) Julich 2004 (Ju04)

potential of the Julich group. In particular, we focus on the $N\Lambda$ and $N\Sigma^-$ forces since the Λ and Σ^- are the first hyperons expected to appear in microscopic calculations of neutron star matter. We finally discuss several calculations of hyperonic matter, based on

the Brueckner-Hartree-Fock approach, including the effect of the hyperonic three-body forces. These results suggest that at high densities the total contribution of the NNY force is repulsive making the resulting equation of state (EoS) stiffer, as required from neutron star mass observations.

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