

The Modern Physics of Compact Stars and Relativistic Gravity

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Quark and Neutron stars

We investigate the matter of Hybrid stars that we have three phases: quark, hadron-quark and hadron phase in which the hadron-quark phase transition in the interior of star. In quark phase, we calculated MIT bag model with constant and density dependent bag parameter, $B(\rho)$. The other phase, the equation of state of hadronic matter part of star using two models[1]. The mass-radius relation and the maximum mass of various type of these compact objects are obtained. The maximum mass of star are highly dependent to choice of interaction. Finally we have compared our calculated results with observation data[3]. REFERENCES: [1] H R Moshfegh, M Ghazanfari Mojarrad. (2011) Thermal properties of baryonic matter. Journal of Physics G: Nuclear and Particle Physics 38:8, 085102. Online publication date: 1-Aug-2011. [2] H. R. Moshfegh, M. Darehmoradi, and M. Ghazanfari Mojarrad AIP Conf. Proc. 1377, pp. 405-407 <http://dx.doi.org/10.1063/1.3628427> [3] J.M. Lattimer, M. Prakash, Astrophys. J 550, 426 (2001).

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