

Effects of delta-matter in neutron stars structure

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We investigate the effects due to the introduction of delta resonances in the neutron star matter. We compare and contrast the mass-radius diagram obtained for four different nuclear equations of state in the relativistic mean field theory. More precisely we vary the coupling constants for the delta-mesons interactions in the limits defined by the constraints on the relativistic mean field of delta-isobar in nuclear matter. Our aim is to suggest a new equation of state that could better fit the observational data of neutron stars, as well as to use the last observational constraints to narrow the range allowed for the delta-meson's coupling constants values.

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