Contribution ID: **29**   Type: **not specified**

Impact of the strangeness on the structure of a neutron star

The analysis of theoretical models which describe the different stages of neutron star evolution, commences with the phase of a hot, contracting proto-neutron star through the subsequent phases, to the final state of a cold neutron star has been done. All calculations have been conducted by means of the equation of state (EoS) which changes gradually with the temperature and density. This is the EoS which determines the physical state and composition of matter at high densities. In this paper the analysis of neutron star models focuses on the appearance and evolution of the hyperon core throughout all the phases of a neutron star evolution. This requires taking into consideration the very inner region of a neutron star. In the performed calculations the EoS for the asymmetric neutron star matter with nonzero strangeness has been constructed. The considered model is characterized by the extended isovector sector and includes the nonlinear vector meson couplings which provides the additional possibility of modifying the high density components of the symmetry energy. Special efforts have been made to produce an optimal set of parameters for the strange sector of the model.

Primary author: Ms PIENKOS, Monika (University of Silesia)

Presenter: Ms PIENKOS, Monika (University of Silesia)