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Hybrid star construction with the extended linear sigma model

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Inner structure of compact stars is a heavily studied field of research currently. The compact star is divided into two major parts, to the outer part called crust and the inner part called core. There are several possible scenarios of the composition of these parts. One possibility is the hybrid star, in which the crust is some nuclear matter, while the core part is quark matter. Since at large baryon densities basically one can only work with effective models, and usually nuclear matter and quark matter are described with different models some unification of these models are needed. In my talk I show recent development in hybrid star constructions using the extended linear sigma model for modeling the quark matter at the core.

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