

Neutron stars from crust to core with quark-meson coupling model

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Recent years continue to be an exciting time for the neutron star physics, providing many new observations and insights to these natural 'laboratories' of cold dense matter. To describe them, we are introducing the quark-meson coupling model that stands out among many others on the market with the natural inclusion of hyperons as dense matter building blocks and the small number of parameters necessary to obtain the nuclear matter equation of state [1]. The latest advances of QMC model and its application to the neutron star physics will be presented, starting from their outer crust nuclei content and moving inwards up to the high core densities of today's heaviest known neutron stars [2].

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- [1] P. A. M Guichon, J. Stone, A.W. Thomas, *Prog. Part. Nucl. Phys.* **100**, 262-297 (2018).
[2] T. Motta, A.M. Kalaitzis, S. Antić, P. A. M Guichon, J. Stone, A.W. Thomas, arXiv:1904.03794 (2019).