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Masses and radii of compact stars in the two-families scenario

Wednesday, 7 July 2021 10:50 (15 minutes)

I will outline the so-called two-families scenario in which neutron stars (composed also of hadronic resonances and of hyperons) exist together with strange quark stars, i.e. compact objects composed entirely of deconfined quark matter. The two-families scenario has rather precise and explicit predictions concerning masses and radii, which can be tested by eXTP. In particular we predict the existence of massive strange quark stars with large radii, as the ones recently observed by NICER, and the existence of rather compact and lighter hadronic stars as suggested by some analysis of the EM spectra.

- 1) Was GW190814 a Black Hole–Strange Quark Star System? *Phys.Rev.Lett.* 126 (2021) 16, 162702
- 2) Why can hadronic stars convert into strange quark stars with larger radii. *Phys.Rev.D* 102 (2020) 6, 063003
- 3) Are Small Radii of Compact Stars Ruled out by GW170817/AT2017gfo? *Astrophys.J.* 860 (2018) 2, 139
- 4) Speed of sound in dense matter and two families of compact stars. 2102.02357

Primary authors: DRAGO, Alessandro (University of Ferrara); Prof. PAGLIARA, Giuseppe (University of Ferrara)

Presenter: DRAGO, Alessandro (University of Ferrara)

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