

Merger of two compact stars: predictions from the two-families scenario

Monday 10 September 2018 14:30 (20 minutes)

The detection of GW170817 and its electromagnetic counterparts has marked the beginning of multi-messenger astrophysics which could allow, in the near future, to finally establish which is the internal composition of neutron stars. I will discuss what we have learned from this first binary neutron star GW's detection on the equation of state in particular concerning the possibility of having "strange matter" in the form of hyperonic matter and/or strange quark matter. Finally, I will present a scenario in which two families of compact stars co-exist: hadronic stars and quark stars and I will discuss what are the expectations, within this scenario, for the next future GW's detections and their counterparts (short-GRBs and kilonovae).

The talk is based on the following papers: *Astrophys.J.* 852 (2018) no.2, L32; *Astrophys.J.* 846 (2017) no.2, 163; *Eur.Phys.J. A* 52 (2016) no.2, 41; *Eur.Phys.J. A* 52 (2016) no.2, 40.

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