

Constraining the mass of sexaquark from neutron star observables

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Following the idea that a stable sexaquark state with quark content $(uuddss)$ would have gone unnoticed by experiments so far and that such a particle would be a good dark matter candidate, we investigate the possible role of a stable sexaquark in the physics of compact stars given the stringent constraints on the equation of state that stem from observations of high mass pulsars and GW170817 bounds on the compactness of intermediate-mass stars. We present for the first time a scenario for which early quark deconfinement in compact stars is triggered by the Bose-Einstein condensation (BEC) of a light sexaquark. We find that the observables of neutron stars put some limitations on the minimum and the maximum mass of sexaquark

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