ID de Contribution: **304** Type: **Talk**

Strange quark nucleation in astrophysics: thermal fluctuations of the composition

mardi 4 juin 2024 14:20 (20 minutes)

At the extreme densities reached in the core of neutron stars and related astrophysical phenomena, it is possible that quark deconfined matter takes place.
The formation of this new phase of strongly interacting matter is likely to occur via a first-order phase transition for the typical temperatures reached in astrophysical processes (e.g. quark deconfinement could play a key role in the explosion of core-collapse supernovae from blue supergiants).
The first seeds of quark matter would then form through a process of nucleation within the metastable hadronic phase. I will address the role of the thermal fluctuations in the hadronic composition on the nucleation of three-flavours (strange) quark matter and its implication for the phenomenology of compact stars.
I will discuss in particular under which conditions strange quark stars
(namely, stars entirely composed of strange quark matter) could be formed in astrophysical processes.

Auteurs principaux: DRAGO, Alessandro (University of Ferrara and INFN Ferrara); LAVAGNO, Andrea (Politecnico di Torino and INFN Torino); PAGLIARA, Giuseppe (University of Ferrara and INFN Ferrara); GUERRINI, Mirco (University of Ferrara and INFN Ferrara)

Orateur: GUERRINI, Mirco (University of Ferrara and INFN Ferrara)

Classification de Session: Track7-OthTop

Classification de thématique: Strangeness in Astrophysics, Other topics