ID de Contribution: **256**   Type: **Contribution orale**

Heavy-Ion collisions and the low-density neutron star equation of state

mardi 4 juillet 2023 10:00 (14 minutes)

Light nuclear clusters are expected to be ubiquitously present in astrophysical environments and play an important role in different astrophysical phenomena, but the estimation of their abundancy requires to correctly estimate the in-medium modification of their binding energy. This can be achieved in a phenomenological way, if theoretical models are calibrated to experimental data from heavy-ion collisions in the Fermi energy regime, where these same clusters are produced in comparable density and temperature conditions.

A useful observable to pin down the in-medium effects is given by the measurement of chemical constants (KC). Recently, KC were extracted from Xe+Sn 32 A MeV INDRA data using Bayesian inference. KC measurements concern light particles emitted at mid-rapidity (gas of nucleons and clusters in equilibrium). A fit of those data was performed within different versions of the Relativistic Mean Field model. Interestingly, once the in-medium coupling was fixed to reproduce the experimental data, the different models were shown to produce compatible predictions concerning the location of the Mott dissolution density of the clusters in the dense medium.

Affiliation de l'auteur principal

LPCCaen/ENSICaen

Auteur principal: BOUGAULT, Rémi (LPCCaen/ENSICaen)

Orateur: BOUGAULT, Rémi (LPCCaen/ENSICaen)

Classification de Session: Mini-colloques: MC11 La matière nucléaire : du laboratoire au cosmos

Classification de thématique: MC11 La matière nucléaire : du laboratoire au cosmos