

Chiral symmetry restoration versus deconfinement in heavy-ion collisions at high baryon density

We study the effect of the chiral symmetry restoration (CSR) in heavy-ion collisions from $\sqrt{s_{NN}}=3-160$ GeV within the Parton-Hadron-String Dynamics (PHSD) transport approach. The PHSD includes the deconfinement phase transition as well as essential aspects of CSR in the dense and hot hadronic medium, which are incorporated in the Schwinger mechanism for the hadronic particle production. Our systematic studies show that chiral symmetry restoration plays a crucial role in the description of heavy-ion collisions giving an increase of the hadronic particle production in the strangeness sector with respect to the non-strange one. We identify particle abundances and rapidity spectra to be suitable probes in order to extract information about CSR, while transverse mass spectra are less sensitive. Furthermore, the appearance/disappearance of the 'horn'-structure in the K^+/π^+ ratio is investigated as a function of the system size in central A+A collisions.

Refs:

[1] A. Palmese et al., Phys. Rev. C 94 (2016) 044912

[2] W. Cassing et al., Phys.Rev. C93 (2016) 014902

I intend to submit my contribution for the proceedings

Yes

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