

Compact stars in the QCD phase diagram VI (Cosmic matter in heavy-ion collision laboratories?)

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Looking for the phase transition - recent NA61/SHINE results

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The fixed target NA61/SHINE experiment (SPS CERN) looks for the critical point of strongly interacting matter and the properties of the onset of deconfinement. It is a two dimensional scan of measurements of particle spectra and fluctuations in proton-proton, proton-nucleus and nucleus-nucleus interactions as a function of collision energy and system size, corresponding to a two dimensional phase diagram ($T - \mu_B$). New NA61/SHINE results would be presented, such as transverse momentum and multiplicity fluctuations in Ar+Sc collisions compared to NA61 p+p and Be+Be data, as well as to earlier NA49 A + A results. Recently, a preliminary signature for the new size dependent effect rapid changes in system size dependence was observed in NA61/SHINE data, labeled as “percolation threshold” or “onset of fireball”. This would be closely related to the vicinity of the hadronic phase transition region.

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