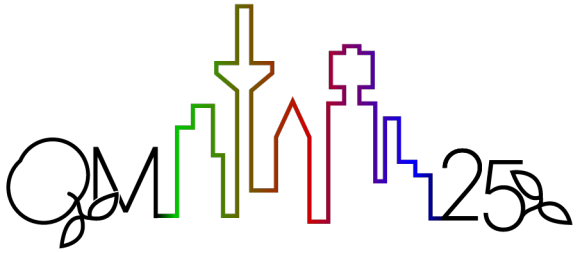

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Nuclear clusters and chemical freeze-out in heavy-ion collisions

We discuss medium effects on light cluster production in the QCD phase diagram
by relating Mott transition lines to those for chemical freeze-out.
In heavy-ion collisions at highest energies provided by the LHC, light cluster abundances should follow the statistical model because of low baryon densities. Chemical freeze-out in this domain is correlated with the QCD crossover transition.
At low energies, in the nuclear fragmentation region, where the freeze-out interferes with the liquid-gas phase transition, self-energy and Pauli blocking effects are important.
We demonstrate that at intermediate energies the chemical freeze-out line correlates with the maximum mass fraction of nuclear bound states, in particular α particles.
In this domain, the HADES, FAIR and NICA experiments can give new insights.

Category

Theory

Collaboration (if applicable)

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