



High Energy Physics - Phenomenology

Towards thermodynamics of the quark quasi-particles

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Some features of hot and dense gas of quarks which are considered as the quasi-particles of the model Hamiltonian with four-fermion interaction are studied. Being adapted to the Nambu-Jona-Lasinio model this approach allows us to accommodate a phase transition similar to the nuclear liquid-gas one at the proper scale and to argue an existence of the mixed phase of vacuum and normal baryonic matter as a plausible scenario of chiral symmetry (partial) restoration. Analyzing the transition layer between two phases we estimate the surface tension coefficient and discuss the possibility of quark droplet formation.

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