

Confinement/deconfinement transition in a thermodynamically consistent quark matter model

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Since an absolute stable strange quark matter was conjectured [1], based on a simple model known as the MIT bag model [2], different versions of density dependent quark models were proposed, but they lack thermodynamic consistency [3]. By using a thermodynamically consistent quark matter model called equiparticle model [4], that is based on a density dependent mass, the confinement/deconfinement transition is studied. In order to do that, the model is modified by the introduction of a dependence on the traced Polyakov loop [5] at zero temperature. The results are presented once the grand canonical potential is obtained and suggests that the model is now capable of describing confined and deconfined thermodynamical phases.

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