

Abstract Submitted
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Strangeness and threshold of phase changes¹ JOHANN RAFELSKI²,
University of Arizona, Tucson, JEAN LETESSIER³, LPTHE, Paris, France — Expansion of the fireball of deconfined matter facilitates formation of an over-saturated strange quark phase space. The excess abundance of strangeness is compensating the suppression of this semi-heavy quark yield by its quark mass. The dynamical yield of strangeness means that the effective number of flavors varies between 2 and 3, rather than 2+1 used in equilibrium LGT. In addition, the dynamical expansion of colored quanta pushes against the confining vacuum structure, with a resulting supercooling of the transition temperature. These nonequilibrium effects alter measured phase boundary compared to theoretical (lattice) evaluation. The phase diagram derived from the analysis of hadron production shows two boundaries, one corresponding to the expected transition between confined and deconfined matter, with a downward temperature shift due to dynamical effects, and the other, at a high quark density, which appears to involve heavy effective quarks, at relatively large temperatures.

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