

Abstract Submitted
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Phenomenological modeling of first-order phase transition in QCD¹ THOMAS WELLE, University of Minnesota, CHRISTOPHER PLUMBERG, Lund University, JOSEPH KAPUSTA, University of Minnesota — We present a method for parametrizing the equation of state of QCD in multiple phases. This method involves the use of a switching function, taking values between 0 and 1, which interpolates between the equations of state for two phases as a function of temperature T and baryon chemical potential μ . As per the conjectured QCD phase structure, this function is constructed to be smooth for all T and except along a line of first-order phase transition which extends from some critical point to the $T=0$ axis. We use this method to model the transition between the hadron resonance gas and quark-gluon plasma phases of nuclear matter. These results are compared to results of lattice calculations for the case of 3 colors and 3 flavors.

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