

Charm degrees of freedom in the vicinity of T_{pc} from lattice QCD

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We study the nature of charm degrees of freedom in hot strong interaction matter by performing lattice QCD calculations of the second and fourth-order cumulants of charm fluctuations, and their correlations with net baryon number, electric charge and strangeness fluctuations. We show that below the chiral crossover temperature, the thermodynamics of charm can be very well understood in terms of charmed hadrons. Above the chiral transition charm quarks show up as new degrees of freedom contributing to the partial charm pressure. However, up to temperatures as high as 175 MeV charmed hadron-like excitations provide a significant contribution to the partial charm pressure.

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