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Baryonic screening masses at very high temperatures

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We present the first detailed investigation of the baryonic screening masses with nucleon quantum numbers in the extremely high temperature regime of QCD. Baryonic screening masses have been computed nonperturbatively on the lattice in the range of temperature from 1 GeV up to 160 GeV as well as at next-to-leading order in the dimensionally reduced effective theory, where quarks are treated as heavy fields. In the entire range of temperature, the non-perturbative results exhibit at most a 8% positive deviation due to interactions with respect to the free theory value $3\pi T$. The contribution due to the interactions is clearly visible up to the highest temperature considered, and cannot be explained by the expected leading behavior in the QCD coupling constant g over the entire range of temperatures explored.

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