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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 non-perturbatively 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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