Chemical freeze-out parameters at RHIC from the microscopic model calculations

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Abstract

The chemical freeze-out parameters such as temperature T, baryo-chemical potential μ_B, entropy per baryon S/A, etc. are determined in Au+Au central collisions at highest RHIC energy, $\sqrt{s} = 200$ AGeV within the microscopic UrQMD model. The hadron-string matter in the central zone is found to expand isentropically with $S/A \approx 150$. Note that at lower, AGS and SPS, energies the agreement between the UrQMD and thermal model analysis of the data is extremely good. The temperature of the early equilibrized hot and dense matter will drop with time from 200 MeV to 140 Mev, while μ_B will stay constant around $\mu_B = 50$ MeV. The formation of long-lived resonance-rich matter is predicted.

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