

Evolution of Chemical Potentials in the Early Universe

The QCD phase diagram is commonly drawn in the baryon chemical potential versus temperature plane ($\mu_B - T$). As until a few microseconds after the big bang the Universe was filled with strong-interaction matter, often also a sketch of the trajectory of the early Universe is displayed in the QCD phase diagram.

However, below the electroweak phase transition and above neutrino oscillations, the cosmic trajectory lies in a (5+1)-dimensional space of chemical potentials for baryon number B , electric charge Q , three lepton flavours L_α and temperature T .

We are going to present some new results on the evolution of these chemical potentials throughout a large temperature range in the early Universe.

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