

Thermalization of spatially homogeneous systems of gluons

We study thermalization of gluons with momentum p characterized by Q in spatially homogeneous systems. In initially under-populated systems in which the equilibrium temperature $T \ll Q$, soft gluons are found to be rapidly generated via radiation to fill a classical thermal distribution $\propto T^*/p$ with $T^* \gg T$. Thermal equilibrium is established only after T^* approaches to T via radiation. Similar features are also found among soft gluons in initially over-populated cases. In these cases, thermal equilibrium is established when the momentum of gluons increases from Q to T mainly due to momentum broadening. No transient formation of the Bose-Einstein condensate is observed.

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