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# Nuclear modification factor in an anisotropic Quark-Gluon-Plasma

We calculate the nuclear modification factor ($R_{AA}$) of light hadrons by taking into account the initial state momentum anisotropy of the quark gluon plasma (QGP) expected to be formed in relativistic heavy ion collisions.
Such an anisotropy can result from the initial rapid longitudinal expansion of the matter.
A phenomenological model for the space time evolution of the anisotropic QGP is used to obtain the time dependence of the anisotropy parameter $\xi$ and the hard momentum scale, $p_{\rm hard}$.
The result is then compared with the PHENIX experimental data to constrain the isotropization time scale, $\tau_{\rm iso}$.
It is shown that the extracted value of $\tau_{\rm iso}$ lies in the range $0.5 \leq \tau_{\rm iso} \leq 1.5$.
The present calculation is also extended to contrast with the recent measurement of nuclear modification factor by ALICE collaboration at $\sqrt{s} = 2.76$ TeV. It is argued that similar values of $\tau_{\rm iso}$ are closer to the data. The sensitivity of the results on the initial conditions has been discussed. We also present the nuclear modification factor at LHC energies with $\sqrt{s} = 5.5$ TeV.

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