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New Jet-quenching model for Heavy Ion Monte Carlo Generators

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The Gyulassy-Lévay-Vitev jet quenching [1] has been implemented for Monte Carlo particle event generators, especially for the HIJING⁺⁺ [2]. With this new extension, one is able to perform calculations taking into account the geometry and opacity of the colliding nuclei.

We analyzed the old and recent heavy ion data from RHIC to LHC in comparison of the opacity parameter values extracted in Ref [3]. We made predictions for the upcoming Xe+Xe collisions at $\sqrt{s} = 5.44$ TeV energy in the HIJING⁺⁺ and kTpQCD_v20 frameworks.

References:

- [1] M. Gyulassy, P. Lévai, I. Vitev, Phys.Lett. B538 (2002) 282-288 and Nucl.Phys. B594 (2001) 371-419
- [2] G.G. Barnaföldi et al. Nucl.Part.Phys.Proc. 289-290 (2017) 373
- [3] J. Albacete et al, Int.J.Mod.Phys. E22 (2013) 1330007
- [4] G.G. Barnaföldi et al Eur.Phys.J. C49 (2007) 333-338

Content type

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