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Flow anisotropy due to momentum deposition in ultra-relativistic nuclear collisions

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Minijets and jets are produced in large numbers in nuclear collisions at TeV energies, so that there are many of them in a single fireball. They deposit non-negligible amount of momentum and energy into the hydrodynamically expanding bulk and cause anisotropies of the expansion. Moreover, due to their multiple production in a single event the resulting anisotropies are correlated with the collision geometry and thus contributes positively also to event-averaged anisotropies in non-central collisions. Using simulations with three-dimensional ideal hydrodynamic model we demonstrate the importance of this effect. It must be taken into account if conclusions about the properties of the hot matter are to be drawn.

Summary

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