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Momentum flow in dijet+QGP-fluid system

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Increase of highly-asymmetric dijet events compared with p+p collisions is observed in ultra-relativistic heavy-ion collisions both at LHC and at RHIC.

At LHC, enhancement of low- p_T particles extending upto large angle from axes of jets is observed by the CMS Collaboration [1].

The total- p_T of these low- p_T particles compensate the imbalance of the dijet momenta.

On the other hand, according to recent results from the STAR collaboration at RHIC, the di-jet imbalance is compensated by the low- p_T particles closer to the jet direction [2].

Motivated by these latest results,

we study the transport dynamics of momenta deposited from jets in QGP fluid.

Simulations of dijet asymmetric events in ultra-relativistic heavy-ion collisions at LHC and at RHIC are performed

by solving relativistic hydrodynamic equations with source terms in fully (3+1)-dimensional Milne coordinates.

We calculate the p_T distribution around jets to interpret di-jet asymmetric events both at LHC and at RHIC.

References

[1] Doga Gulhan [CMS Collaboration], talk at Quark Matter 2014.

[2] Jörn Putschke [STAR Collaboration], talk at Quark Matter 2014.

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