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24-Looking for Decoherence effects in the Quark-Gluon plasma

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Jets are colourless objects. Nevertheless, they keep information on their colour connections between one another. The pull vector observable supplies additional information regarding such connections in addition to the conventional properties, such as momentum and size. At ultra relativistic heavy ion collisions, one observes the presence of the Quark-gluon Plasma (QGP). Jet interaction with QGP leads to the surfacing of jet quenching effects. Previous work was performed to study colour correlation between colour singlet and colour octet dijet systems. We aim at assessing the extent of influence that the QGP medium has in inner jet structure, by extending this study to heavy ion collisions. To do that, we use the pull vector/ pull angle observable as measures of colour correlation inside jets. This work is meaningful because colour flow information is due to complement the kinematic properties of the jet allowing to identify irreducible backgrounds or even to match jets with the correct physical process. The results will have immediate impact and application at the current and future heavy-ion experimental data.

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