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Probing jet decoherence in heavy ion collisions

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A key feature of jet fragmentation in vacuum is colour coherence, which leads to angular ordering of the shower. Recent works have pointed out the importance of colour coherence for jets passing through QCD matter. The results are indicative of a reorganisation of the jet fragmentation in terms of resolved subjets each of which are affected independently by energy loss in the medium. We study this picture in detail for groomed jets in heavy-ion collisions using the "soft drop"procedure which singles out two hard jet substructures. As a direct measurement of colour (de)coherence, we show how wide-angle structures should be strongly suppressed compared to narrow ones. We also discuss the sizeable effects of colour (de)coherence on inclusive as well as jet substructure observables.

Preferred Track

Jets and High pT Hadrons

Collaboration

Not applicable

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