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Measurement of jet structure and substructure in heavy ion collisions with ATLAS

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Studies of jet structure in heavy-ion collisions can provide information about the mechanism of jet quenching in the hot and dense QCD medium created in these collisions and about its properties over a range of distance scales. This talk presents the latest ATLAS measurement of the internal structure of jets to shed more light on the modification of the parton showering process in the presence of the medium. A measurement of the angular distribution of charged particles around the jet axis in Pb+Pb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV is presented. The measurement is performed for jets with radius parameter $R = 0.4$ and is extended outside the jet cone to a radial distance of 0.8 in intervals of charged particle and jet transverse momentum. The talk also presents studies of fragmentation functions and distributions of transverse momentum of charged particles inside a jet.

Furthermore, a new measurement of how the suppression of large-radius jets depends on the internal jet structure is presented. This measurement brings new information about the evolution of the parton shower in the medium and tests the sensitivity of the jet quenching to color coherence effects.

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