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Di-jet properties in pp at $\sqrt{s} = 7$ TeV and Pb-Pb at $\sqrt{s_{NN}} = 2.76$ by LHC-ALICE

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A di-jet produced by a hard scattering of partons plays a vital role to characterize the properties of hot and dense QCD matter produced in Pb-Pb collisions at LHC. In particular, a di-jet is one of the key probes to look for a medium response due to a strong jet quenching effect, as reported by the CMS and ATLAS collaborations. In this analysis, we used the data collected by the ALICE collaboration, in pp collisions at $\sqrt{s} = 7$ TeV and Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. Charged and neutral leading jets have been used to study the momentum balance with the recoiling charged jet. The di-jet momentum balance (A_J) in pp at $\sqrt{s} = 7$ TeV as a function of charged particle multiplicity has been measured and is compared with the PYTHIA simulation. We also report the status of an analysis of di-jet measurement in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV to search for a possible medium response by a propagation of high energy jet, which is sensitive to parton energy loss.

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