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Machine Learning based jet momentum reconstruction in Pb-Pb collisions measured with ALICE

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The precise reconstruction of jet transverse momenta in heavy-ion collisions is a challenging task. A major obstacle is the large number of uncorrelated (mainly) low-p_{T} particles overlaying the jets. Strong region-to-region fluctuations of this background complicate the jet measurement and lead to significant uncertainties. We developed a novel approach to correct jet momenta (or energies) for the underlying background in heavy-ion collisions. The approach allows the measurement of jets down to extremely low transverse momenta and for large resolution R by making use of common Machine Learning techniques to estimate the jet transverse momentum based on several parameters.

In this talk, we will present transverse momentum spectra and nuclear modification factors of track-based jets that have been corrected by this Machine Learning approach and comparisons to published results where possible. The analysis was performed on Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV recorded with the ALICE detector and measures jets with large resolution parameters for low momenta, unprecedented thus far in data on heavy-ion collisions.

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