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Jet Reconstruction and the Evolution of Background Effects in Pb-Pb Collisions Measured with the ALICE Experiment at the LHC (15'+5')

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The suppression of high- p_T hadron production in central heavy-ion events compared to proton-proton collisions, known as jet quenching, reflects the parton energy loss in a hot and dense medium which is produced in heavy-ion collisions. The reconstruction of jets provides a more direct link to the initial hard-scattered partons and its modified fragmentation process.

The measurements in proton-proton collisions offer a clean sample of jets and a baseline, while the jet reconstruction in heavy ion collisions is strongly affected by soft background from the underlying event. For an appropriate interpretation of the jet observables it is essential to understand the influence of the background and its fluctuations on the reconstructed jets. With this purpose we embed a well-defined probe into measured heavy-ion data and study its reconstruction in the presence of large backgrounds. We will present the status of jet reconstruction based on charged particles with the ALICE experiment and the influence of background effects in heavy-ion collisions on the reconstructed jet spectrum.

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