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Measurement of azimuthal correlations of D mesons with charged particles in pp collisions at $\sqrt{s} = 13$ TeV with ALICE at the LHC

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Abstract content

The ALICE (A Large Ion Collider Experiment) detector at the LHC is dedicated to the study of the properties of the hot and dense QCD matter (Quark Gluons Plasma) produced in the nucleus-nucleus collisions at high energy. The heavy quarks (charm and beauty), having a large masses, are produced in the hard-parton scattering in the early stages of the collision. Therefore, they experience the whole evolution of the hot and dense medium, representing an important tool for its characterization. The study of angular correlations between D mesons and charged particles in Pb-Pb collisions gives insight about the energy loss of charm quark and the medium-induced modification of its fragmentation into jets. Moreover, in pp collisions helps understanding the production mechanisms, fragmentation and hadronization of charm quarks and acts as a reference for p-Pb and Pb-Pb measurements.

In this poster, the measurement of azimuthal correlations between D^0 meson and charged particles in pp collisions at $\sqrt{s} = 13$ TeV is presented. The comparison of results with $\sqrt{s} = 7$ TeV results gives the collisional energy dependence of correlations. The data are also be compared with simulations results performed with different event generators.

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