

π^0 -hadron correlations in pp, p-Pb and Pb-Pb collisions at ALICE

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We present the status of the analyses and latest results on π^0 -hadron correlations measured with ALICE experiment in pp and Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV and p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. Two-particle correlations technique is a powerful tool to study collective motion effects and energy deposition of partons in quark-gluon matter formed in high-energy particles collisions. Measuring the hadron per-trigger yield with high p_T trigger hadrons we observe the correlation of particles belonging to the same jet as the trigger hadron, and those hadrons from the jet on the opposite side. A detailed study of di-hadron correlations with its centrality dependence in p-Pb and Pb-Pb collisions, comparison to pp collisions at the same \sqrt{s} and model predictions could provide more insight to the nature of the jet modification in Quark Gluon Plasma (QGP). Using identified particles as trigger is advantageous for determination of constrains on theoretical models describing parton energy loss in the quark-gluon medium.

ALICE experiment includes two electromagnetic calorimeters, PHOS and EMCAL, which can measure and identify π^0 mesons in a wide p_T range. Associated charged hadrons are measured with the ALICE Central Tracking System. We present measured correlation functions and per trigger yields and compare them to the theoretical predictions.

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