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Neutral pion analysis with high energy photon trigger in pp collisions at 8TeV

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ALICE is designed to study heavy-ion collisions at the LHC to investigate properties of deconfined strongly interacting matter, Quark Gluon Plasma (QGP). High p_T particle production is considered as a powerful tool to study the QGP. The hadron yields in nucleus-nucleus collisions can be quantified by the nuclear modification factor R_AA. The R_AA at high p_T is significantly smaller than 1, which can be interpreted by the parton energy loss. Measurements of hadron production in pp collisions is important as a reference for studying heavy-ion collisions.

The high-energy photon trigger was deployed by the Photon Spectrometer (PHOS) of the ALICE detector to enhance the higher pT photon and neutral pion detection capability. To evaluate the neutral pion production cross-section with this trigger, the trigger efficiency for neutral pion has to be studied. Minimum-bias data sample was used to measure the trigger efficiency for a single cluster as a function of reconstructed energy. The trigger efficiency for neutral pion is then estimated in simulations using the single-cluster efficiency. The status of analysis of neutral pion production in pp collisions at $\sqrt{s} = 8$ TeV measurement with the high-energy photon trigger will be presented.

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