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Measurement of neutral mesons at high transverse momentum with the ALICE EMCal

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One of the physics observables measured with the ALICE Electromagnetic Calorimeter (EMCal) are neutral mesons such as π^0 and η that are reconstructed through their two-photon decay. The EMCal offers a complementary method to the neutral meson measurement with the ALICE tracking system and the PHOS spectrometer. High p_T neutral mesons are used to study the modifications of partons in the medium that is created in heavy-ion collisions. In pp and p-Pb collisions, they can be used to study fragmentation functions, and modification of nuclear PDFs in the lead nucleus, respectively.

The measurement of high p_T neutral mesons is challenging due to various reasons. First, they are a rare probe that requires the use of triggers to collect sufficient statistics for the measurement. Furthermore, the opening angle of the decay photon decreases with increasing transverse momentum and their electromagnetic showers in the detector showers in the detector have a higher probability to overlap. In this analysis, we focus on using separated showers for the neutral meson reconstruction. We will present the current status of high p_T neutral meson measurement in the EMCal in pp collisions.

On behalf of collaboration:

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