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Correlation between isolated photons and charged hadrons in pp and Pb-Pb collisions measured with ALICE

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Gamma-hadron correlations measured in heavy-ion collisions produced at the LHC allow to investigate medium induced jet modifications in a transverse momentum (p_t) range below 50 GeV/c, where jet reconstruction is challenging because of the relatively large contribution from the underlying event. At high p_t direct photons, produced in Compton and annihilation QCD leading order processes, are associated to a jet in opposite direction. Such processes are tagged experimentally by identifying leading isolated photons and their correlated associated hadrons in opposite azimuthal direction. The jet fragmentation is estimated from the hadrons and the photon p_t via the imbalance parameter $x_E = -\frac{\vec{p}_{t,h} \cdot \vec{p}_{t,g}}{|\vec{p}_{t,g}|^2}$. The remaining contamination from neutral meson decay photons is subtracted statistically. We present the first results extracted from gamma-hadron correlations measured in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV, triggered by the ALICE electromagnetic calorimeters. Medium effects will be studied by comparison to results from pp collisions data at $\sqrt{s} = 7$ TeV, combined with a smaller dataset at $\sqrt{s} = 2.76$ TeV.

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