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Parton modification and medium response studies using EW-boson-tagged jets and hadrons with pp and PbPb collisions at 5.02 TeV with the CMS detector

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Photons and Z boson can be used to constrain the kinematics, as well as the flavor, of the recoiling parton, before its interaction with the quark-gluon plasma. While photons are more abundant, they suffer from larger systematic uncertainties, particularly at low p_T , from the background photons from neutral meson decays. Tagging with Z bosons is a complementary way to study modifications of low p_T partons as well as the soft particles from the medium response. The talk will present studies of kinematics correlations between Z bosons and charged particles, photon-tagged jet fragmentation functions and the jet shapes in pp and PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV using data collected with the CMS detector.

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