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Mapping the redistribution of jet energy in PbPb collisions using jets with various radius parameters with CMS

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Measurements of jets produced in collisions of heavy ions, such as dijet asymmetry, boson-jet momentum imbalance, and inclusive jet spectra, have consistently indicated final states of less energy as compared to pp collisions. This energy loss is interpreted as a signature of the quark-gluon plasma. Subsequent studies have shown that the energy lost by jets is redistributed to large angle and in multiplicities of softer particles. In this talk, we report on the CMS results on jet energy redistribution using PbPb data at a nucleon-nucleon center-of-mass energy of $\sqrt{s_{NN}} = 5.02 TeV$, including new results on radial scans of anti- k_t jet spectra with resolution parameter R from 0.2 to 1.0. These measurements are complementary to jet substructure measurements, which will also be discussed in this talk. These results can distinguish between mechanisms of parton-medium interaction as encoded in various Monte Carlo event generators and provide insight into the medium response.

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