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Measurement of jet quenching in direct photon-jet events in leadlead collisions at $\sqrt{s_{NN}} = 2.76$ TeV RAFAEL KRICHEVSKY, Columbia University, PETER STEINBERG, Brookhaven National Laboratory, BRIAN COLE, Columbia University, ATLAS COLLABORATION — Direct photons are an important resource for studying the physics of jet quenching in heavy ion collisions. Recent measurements have shown that jets lose energy when traveling through a dense QCD medium; isolated photons can be used to calibrate the associated jet energy and evaluate the extent of quenching. In this analysis, results will be presented for measurements of photon-jet correlations using approximately 140 μb^{-1} of data from lead-lead collisions at nucleon center-of-mass energy $\sqrt{s_{NN}} = 2.76$ TeV, recorded by the ATLAS detector at the Large Hadron Collider. Events that have isolated prompt photons with transverse momentum $p_T > 65$ GeV opposite jets with $p_T > 25 \text{ GeV}$ are considered, and the transverse momentum imbalance is quantified by means of the ratio $X_{J\gamma} = p_T^{\text{jet}}/p_T^{\gamma}$ for different collision centralities, photon energy bins and angular cuts. Background subtraction, efficiency, unfolding and jet-scale corrections are applied to the measured distributions, which are compared in turn to perturbative QCD calculations.

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