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Measurements of Z- and jet-tagged fragmentation and medium response in Pb+Pb and p+Pb collisions by ATLAS

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Measurements of high p_{T} hadrons produced in hard scattering events offer insight to the modification of jet fragmentation and medium response of the quark-gluon plasma (QGP)
created in ultrarelativistic nucleus-nucleus collisions.
The hard scatter, tagged by an electroweak boson or a jet, fixes initial properties of the showering partons prior to interactions with the QGP. In large systems, modification to the parton fragmentation is an expected consequence of the strong medium interactions, while in small systems, indications of QGP
droplet formation are juxtaposed with previous observations of minimal jet quenching.
With the large luminosity from Run 2 data taking, ATLAS has performed new measurements of hadrons correlated with Z bosons in Pb+Pb collisions, notably without any formal reconstructed jet requirement which reduces any potential bias toward
particular fragmentation patterns. Theoretical models of parton evolution in the QGP, particularly those with medium response, are compared to this data. Additionally, a new measurement of jet-hadron correlations in centrality-selected p+Pb collisions is presented and compared with theoretical expectations. The measurement provides stringent limits on both cold nuclear matter and possible jet quenching effects.

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