

# Quark Matter 2019 - the XXVIIIth International Conference on Ultra-relativistic Nucleus-Nucleus Collisions



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## Measurements of electroweak boson tagged jet energy loss and modification by ATLAS

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Measurements of reconstructed jets produced in conjunction with a high- $p_T$  electroweak boson (photon or Z) offer a discerning way to study the quark gluon plasma (QGP) created in ultrarelativistic nucleus-nucleus collisions. The high- $p_T$  boson tags the initial energy, direction, and flavor of the opposing parton or partons before they begin to shower and propagate through the QGP, offering a valuable handle for understanding the mechanism of parton energy loss. ATLAS has previously reported measurements in 2015 Pb+Pb data of the photon plus inclusive jet  $p_T$  balance, and the photon-tagged jet fragmentation functions. The significantly larger luminosity of 2018 Pb+Pb data delivered by the LHC, as well as improvements to the photon, electron, and jet reconstruction in heavy ion events with the ATLAS detector, have enabled qualitatively new measurements in these channels, including the first Z-tagged measurements. This talk will present new results on the energy loss and modification of jets created in coincidence with a high- $p_T$  photon or Z boson in Pb+Pb collisions.

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