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Electron and Photon performance in ATLAS at the LHC

An excellent electron and photon performance is crucial for precision results from high energy proton-proton collisions with electrons and photons in the final state.

Identification, energy calibration, response uniformity and linearity for electrons and photons with the ATLAS detector during the LHC run I will be presented.

Events with W and Z bosons and J/psi mesons are employed to benchmark these performance parameters. The uncertainties of the measured identification efficiencies are at the few per mil level for electron transverse energy greater than 30 GeV and in the range of 1-2% for high energy photons. The achieved calibration for electrons from Z decays is typically accurate to 0.05% in most of the detector acceptance, rising to 0.2% in regions with large amounts of passive material and is on average 0.3% for photons. The stability of the electron energy response as a function of the mean number of interactions per bunch crossing and as a function of time show stability at the level of 0.05%.

Early Run2 results will be presented if available.

additional information

Submitted on behalf of the ATLAS Electron/Gamma Combined Performance Group by the ATLAS Speakers Committee representative Alex Read (a.l.read@fys.uio.no). Alex is NOT the poster author/presenter!

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