

Abstract Submitted
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Electron Identification with the ATLAS detector LUCAS FLORES,
Univ of Pennsylvania, ATLAS COLLABORATION COLLABORATION — Elec-
tron identification for pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector is
performed using a likelihood based method both online in the trigger and offline.
The likelihood is an improvement on the cut based method. A multivariate analysis
technique (MVA), the likelihood method is able to simultaneously assess many char-
acteristics before making a decision. This likelihood is constructed from variables
that discriminate between electrons and backgrounds. As some of these variables
depend on the number of pileup collisions per bunch crossing, it is advantageous
to have an event-by-event measure of the number of pileup collisions. This can be
used to adjust the likelihood discriminant value as a function of the pileup to ensure
that the electron identification remains efficient at high pileup, without drastically
increasing the amount of background accepted. This is currently being done with
the number of primary vertices offline and the average number of collisions online
as the measures for pileup. A potential improvement presented here is to measure
the pileup with the TRT local Track Occupancy, which is a more local descriptor of
activity around an electron candidate and is available both online and offline.

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