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Electron Identification Studies for the ATLAS Level 1 Trigger Upgrade LAST FEREMENGA, University of Texas at Arlington, MARC-ANDRE PLEIER, FRANCESCO LANNI, Brookhaven National Laboratory, ATLAS COLLABORATION — We study options available for achieving an efficient selection of electrons against an overwhelming background of neutral pions at the hardware-based trigger of the ATLAS trigger system. The lateral profiles of electrons and neutral pions are different when the interaction point of the colliding protons is at $z = 0$ and an efficient selection is achieved. We show that this efficiency is lost for a more realistic model of the luminous profile of the proton beam. A variable used at the software-based trigger is also shown to be unstable against increasing pileup.

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