

Offline electron identification using a Deep Neural Network (12+3)

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Previously in ATLAS a likelihood approach has been used for prompt electron identification against different possible backgrounds.

Over the last few years, great efforts have been made in order to develop a versatile, powerful and reliable deep neural network (DNN) that is able to perform a multinomial classification of electrons according to different pre-defined classes. Once this machine learning algorithm learns the fundamental characteristics of each electron type, different discriminants can be built out of the multinomial scores given by the DNN in order to decide whether an electron can be identified as prompt within a pre-defined efficiency.

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