Contribution ID: **55**   Type: **not specified**
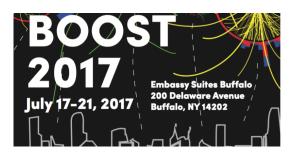
ATLAS quark/gluon tagging

Tuesday, 18 July 2017 17:00 (20 minutes)

Distinguishing quark-initiated from gluon-initiated jets is useful for many measurements and searches at the LHC. We present a quark-initiated versus gluon-initiated jet tagger from the ATLAS experiment using the number of reconstructed charged particles inside the jet. The measurement of the charged-particle multiplicity inside jets from Run 1 is used to derive uncertainties on the tagger performance for Run 2. With an efficiency of 60% to select quark-initiated jets, the efficiency to select gluon-initiated jets is between 10 and 20% across a wide range in jet p_T up to 1.5 TeV with about an absolute 5% systematic uncertainty on the efficiencies. In addition, we also present preliminary studies on a tagger for the ATLAS experiment using the full radiation pattern inside a jet processed as images in deep neural network classifiers.

Presenter: RUBBO, Francesco (SLAC National Accelerator Laboratory (US))

Session Classification: Algorithms