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## Identification of boosted top quarks and W bosons with Machine learning in ATLAS

*Wednesday, July 19, 2017 3:00 PM (20 minutes)*

We present techniques for the identification of hadronically-decaying W bosons and top quarks using high-level features as inputs to boosted decision trees and deep neural networks in the ATLAS experiment at  $\sqrt{s}=13$  TeV. The performance of these machine learning based taggers is compared in Monte Carlo simulation with various different tagging algorithms. An improvement in background rejection with respect to different taggers is observed. In addition, the performance of the machine learning taggers is examined in full Run-II data set in top quark pair, dijet and photon+jet topologies.

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**Session Classification:** Algorithms