



Contribution ID: 32

Type: **Talk**

## Increasing track reconstruction efficiency in dense environments at ATLAS

*Friday 5 April 2019 12:20 (25 minutes)*

In the ATLAS experiment at the LHC, the primary-track reconstruction algorithm utilizes iterative track-finding seeded from combinations of silicon detector measurements. As all realistic combinations of space-points have been made, there are a number of track candidates where space-points overlap, or have been incorrectly assigned. This necessitates an ambiguity-solving stage. In the ambiguity solver, track candidates considered to create the reconstructed track collection are processed individually in descending order of a track score, favouring tracks with a higher score. The scoring algorithm depends on simple measures of the track quality, which includes the  $\chi^2$  of the track fit, cut on hits and holes on track and merged clusters. In this talk, modifications to the ambiguity solver aimed at improving track reconstruction in the dense core of high pT jets will be discussed. These modification include application of machine learning techniques to the scoring function and for classification of merged tracks.

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**Track Classification:** 3: Advanced usage of tracks