Contribution ID: **109** Type: **Parallel**

# Review of the First $W$ Boson Mass Measurement with the ATLAS Detector

*Friday, 1 June 2018 14:00 (20 minutes)*

A precise measurement of the $W$ boson mass represents an important milestone to test the overall consistency of the Standard Model. Since the discovery of a Higgs Boson, the $W$ boson mass is predicted to 7 MeV precision, while the world average of all measurements is 15 MeV, making the improved measurement an important goal. Large samples of leptonic decays of $W$ and $Z$ bosons were collected by the ATLAS detector with efficient single lepton triggers in the 7 TeV data set corresponding to an integrated luminosity of 4.6 $\text{fb}^{-1}$. With these samples the detector and physics modelling has been studied in great detail and enabled a $W$ boson mass measurement with a precision of 19 MeV, which will be presented in this talk. Special focus will be drawn on the modeling of the production processes of $W$ bosons in proton-proton collisions, that are crucial for this measurement.

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**Session Classification:** TSEI / PHE

**Track Classification:** PHE