



Contribution ID: 178

Type: **Experiment**

## Searches for decays of the Higgs boson to $\mu^+\mu^-$ pair with the ATLAS detector

The Higgs-like boson discovered by the ATLAS and CMS collaborations is a candidate for the last unobserved particle predicted by the Standard Model (SM). The next experimental step is the measurement of its properties, most notably its couplings to fermions. This contribution will present a search for the SM Higgs boson via decays to dimuon pairs using 20.7 fb<sup>-1</sup> of 8 TeV collision data recorded by the ATLAS detector in 2012. The SM prediction of the branching ratio for this decay is small, making this a challenging measurement. The results of the search in this channel are presented and compared with the SM predictions for Higgs boson decays to dimuon pairs.

**Primary author:** RUDOLPH, Christian Jorg (Technische Universitaet Dresden (DE))

**Presenter:** RUDOLPH, Christian Jorg (Technische Universitaet Dresden (DE))

**Track Classification:** Poster