



Contribution ID: 106

Type: Oral Presentation

## Search for a new heavy boson in $b\bar{b}\gamma\gamma$ channel with ATLAS detector in $pp$ at $\sqrt{s} = 13$ TeV

Thursday, 11 July 2019 12:00 (20 minutes)

We search for a new heavy resonance in  $H \rightarrow b\bar{b}\gamma\gamma$  decay channel. The range of the heavy boson mass is between [180-1500] GeV. The analysis uses proton-proton collision data with an integrated luminosity of 140 fb<sup>-1</sup> recorded at a centre-of-mass energy of 13 TeV with the ATLAS detector. In this work, we discuss event selections and signal optimisation. In addition, we compare data to state-of-the-art Monte Carlo simulation on the control region.

**Apply to be considered for a student award (Yes / No)?**

Yes

**Level for award (Hons, MSc, PhD, N/A)?**

PhD

**Primary author:** Ms SHRIF, Esra (University of the Witwatersrand)

**Co-authors:** Prof. MELLADO, Bruce (University of the Witwatersrand); Dr RUAN, XIFENG (WITS)

**Presenter:** Ms SHRIF, Esra (University of the Witwatersrand)

**Session Classification:** Nuclear, Particle and Radiation Physics

**Track Classification:** Track B - Nuclear, Particle and Radiation Physics