

# From Top to Higgs in ATLAS

Roger Naranjo

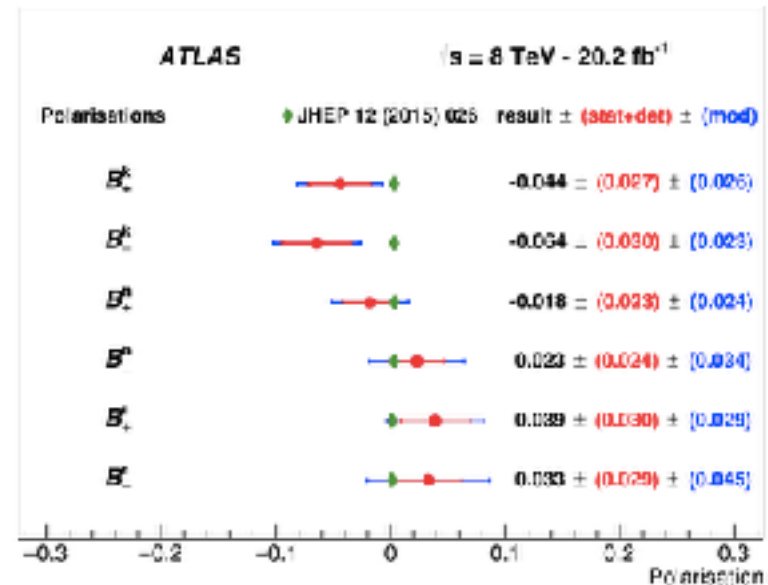
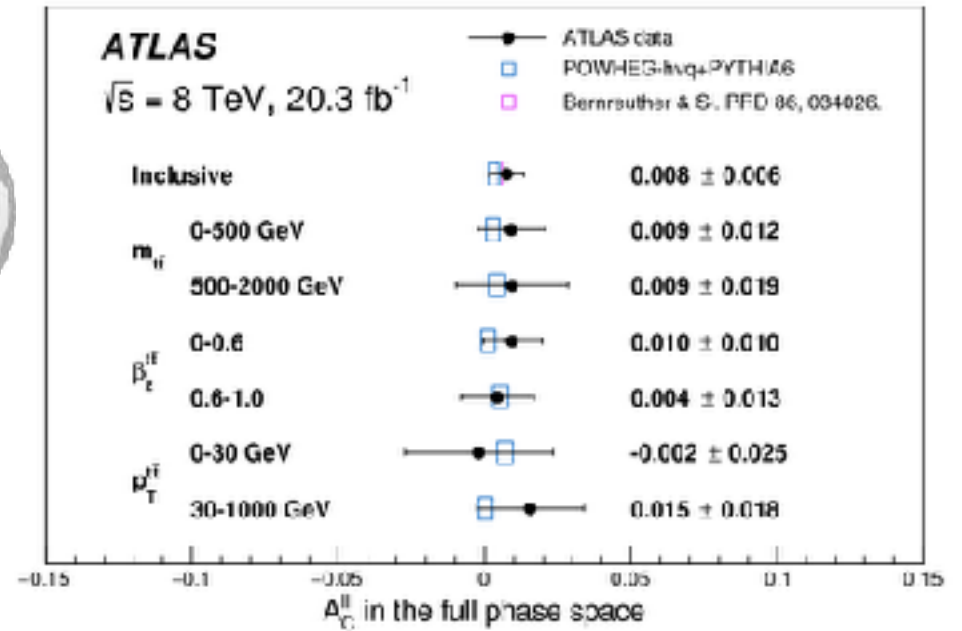
DESY Fellows meeting



# About Me

Roger Naranjo

- I am from Venezuela (country next to Colombia)
- Diploma in the University of Los Andes (Merida Venezuela)
- Master in Fundamental Physics (Merida, CERN - Eplanet)
  - Photon ID for photons with low transverse momentum
- PhD University of Wuppertal
  - Top-quark properties:
    - Charge Asymmetry
    - Spin Correlations
  - Lorentz Angle monitoring
- DESY Fellow since July 2017

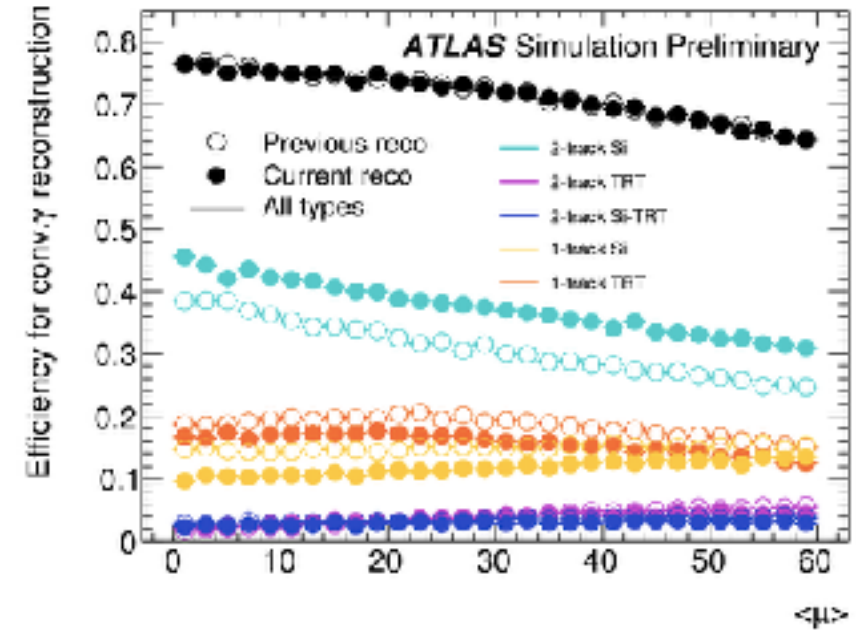


# My Current Work

## Activities and challenges

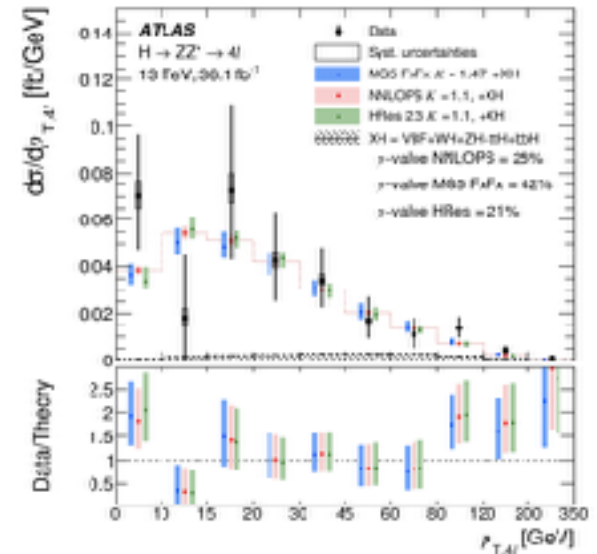
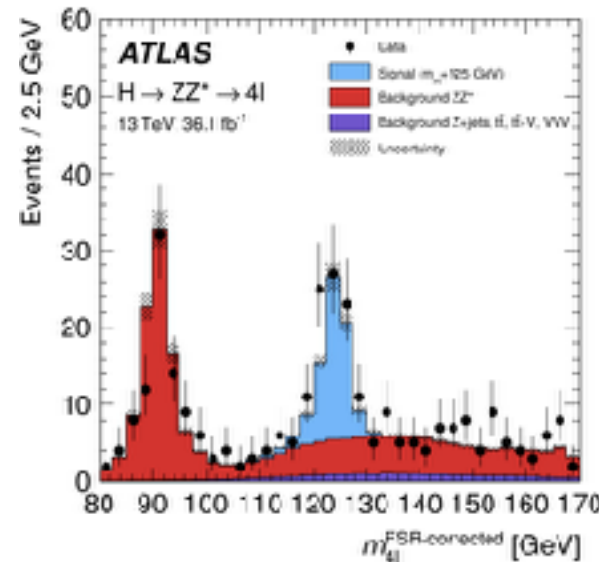
### Performance & Software

- Photon reconstruction and performance
  - Tuning/adapting the current reconstruction algorithms to the different pileup profiles
- ATLAS Release Tester (ART)
  - Big collaborations - big (coding) mistakes?
  - Main purpose of ART is to test the ATLAS software as a whole
  - Integration testing for the photon and electron reconstruction



### Physics Analysis

- $H \rightarrow ZZ \rightarrow 4l$  differential cross-section
  - Planning to redo the measurement using the full 2015+2016+2017 data as a function of  $p_T$  and rapidity
    - Sensitive to perturbative QCD and PDF
  - Currently working on re-optimizing selection and the background estimation (fakes)
  - Probing unfolding procedures



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# My Favorite Plot

## Egamma Reconstruction Algorithm

Some place (still to identify) for improvement

