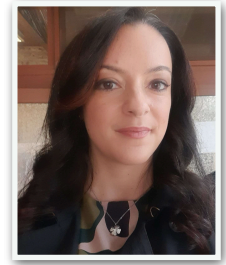


# Alessandra Betti

## Curriculum Vitae



### Education

- **2019: Ph.D. in Natural Science, Experimental Particle Physics**, Rheinische Friedrich-Wilhelms Bonn Universität, Thesis: “Search for the Standard Model Higgs boson pair production and new physics phenomena in the  $b\bar{b}\tau\tau$  final state with the ATLAS detector”
- **2016: Master’s Degree in Physics**, Experimental Particle Physics Curriculum, Sapienza Università di Roma, Thesis: “Study of Micromegas position detectors for the forward muon spectrometer of the ATLAS experiment at the LHC”
- **2013: Bachelor’s Degree in Physics**, Sapienza Università di Roma, Thesis: “Study of elastic proton-(anti)proton scattering at high energy”

### Academic appointments

- **01/2022-ongoing: Research Assistant Professor (RTD-A)**, Sapienza Università di Roma, Dipartimento di Fisica
- **06/2019-12/2021: Postdoctoral Research Fellow**, Southern Methodist University of Dallas, Physics Department
- **02/2016-05/2019: Academic Assistant**, Rheinische Friedrich-Wilhelms Bonn Universität, Physikalisches Institut

### Scientific coordination roles in ATLAS

- **2023-ongoing: Tau Measurement and Calibration subgroup convener**
- **2021-2023: DiHiggs subgroup convener**
- **2019-2021: DiHiggs combination analysis contact**

### Summary of research activities in ATLAS

- **2023-ongoing: Search for high mass resonances decaying to  $ZZ$  in the 4 leptons final state**
- **2023-ongoing: Search for exotic decays of the Higgs boson to  $aa$  in the 4 taus final state**
- **2023-ongoing: High-level Muon trigger developments**
- **2023-ongoing: High-level Tau trigger developments and calibration**
- **2019-2023: Search for Higgs boson pair production in the  $bbbb$  final state**
- **2019-2021: Search for Dark Matter produced in association with a Standard Model Higgs boson decaying to  $b$ -quarks**
- **2018-ongoing: Combination of Di-Higgs searches, EFT interpretations and HL-LHC extrapolations**
- **2017-2023: Search for pair production of leptoquarks in the  $b\tau b\tau$  final state**
- **2016-ongoing: Tau identification and calibration**
- **2016-ongoing: Search for Higgs boson pair production in the  $b\bar{b}\tau\tau$  final state**

## **Contributions to ATLAS Detector Operations and Upgrades**

- **2022-ongoing:** Muon shifter
- **2021:** Calorimeter Shifter
- **2019-2021:** LAr Calorimeter run coordinator
- **2019-2021:** LAr Calorimeter online software expert
- **2017-2018:** Data Quality Shifter
- **2015-ongoing:** New Small Wheel performance studies

## **Teaching activities**

- **2023-2024:** Tutor of the Physics Laboratory II course, Sapienza Università di Roma, Dipartimento di Fisica
- **2023:** Co-lecturer of the Computing Laboratory course, Sapienza Università di Roma, Dipartimento di Fisica
- **2022-2023:** Lecturer of the General Physics I course, Sapienza Università di Roma, Facoltà di Ingegneria Civile e Industriale e Facoltà di Ingegneria dell'Informazione, Informatica e Statistica (Latina)
- **2021:** Tutor and discussion leader for the CERN-FERMILAB 2021 Summer School, CERN-FERMILAB
- **2017-2019:** Tutor of the Advanced Laboratory course, Bonn Universität, Physikalisches Institut
- **2016:** Tutor of the Bonn-Cologne Graduate Student Intensive Week, Bonn Universität, Physikalisches Institut
- **2016:** Tutor of the Particle Detectors and Instrumentation course, Bonn Universität, Physikalisches Institut
- **2016-ongoing:** Co-supervision of student thesis projects in ATLAS (1 Bachelor student, 2 Master students and 3 PhD students)

## **Outreach activities**

- **2023-2024:** INFN Art&Science
- **2023-2024:** CERN International Masterclass at Sapienza Università di Roma
- **2023:** INFN Roma Open Day
- **2022-ongoing:** INFN HepScape
- **2022-2023:** European Research Night, Città dell'Altra Economia, Roma
- **2021-2023:** "A volte ritornano", Liceo Scientifico Paolo Ruffini, Viterbo
- **2020-2022:** Moderator of the CERN International Masterclass program
- **2019-2021:** CERN guide (ATLAS, Synchrocyclotron, Microcosm)
- **2019:** CERN Open Days