



## PhD Studentship on the ATLAS Experiment (BSM with multileptonic signatures)

<http://www.sussex.ac.uk/epp/>

A fully funded studentship is available to join an exciting “anomaly hunting” programme searching for new physics beyond the Standard Model with the ATLAS experiment at CERN’s Large Hadron Collider (LHC), under the supervision of Professor Antonella De Santo. Exotic scenarios providing viable solutions to experimental evidence that is inconsistent with the Standard Model of particle physics (e.g., the existence of dark matter in our universe, or the so-called “g-2” anomaly) will be explored using LHC Run-2 and Run-3 data using the golden “multileptonic signatures”, whereby proton-proton collisions yield at least two electrons, muons, or taus in the final state. Signal-to-background selections will be optimised using powerful data mining and machine learning techniques. In addition, there will be an opportunity to participate, at an adequate level, in broader-interest core experimental activities of the ATLAS experiment, such as triggering (including in view of the high-luminosity LHC upgrade), the study of the combined physics performance of the ATLAS detector, and experimental operations at CERN.

Professor De Santo is a leading researcher and an established supervisor and mentor of early-career researchers. The thriving Sussex ATLAS group offers a dynamic and supportive environment in which everyone is encouraged to achieve their full potential.

In addition to excellent academic training opportunities (including through participation in at least one summer school), Sussex PhD students have access to industry-level training and networking opportunities (for example, through the SEPnet network of physics departments in the South-East of England, or the Sussex data-intensive science centre DISCUS).

Funding is available for a September 2024 start which includes a tax-free bursary (£18,662 per annum in 2023/24) and fully paid tuition fees for 3.5 years at the home-student level (£4,712 per annum in 2023). Additional financial support is provided to cover short-term and long-term travel. Interviews of shortlisted candidates will be held in February and March initially and will continue until positions are filled. Applications from self-funded students interested in available projects are also welcome at any time of the year.

For further information on this studentship, feel free to reach out to Professor De Santo directly on [a.de-santo@sussex.ac.uk](mailto:a.de-santo@sussex.ac.uk).

For practical questions about applications and/or eligibility for funding, please contact [mps-pgrsupport@sussex.ac.uk](mailto:mps-pgrsupport@sussex.ac.uk).

For academic questions please contact the coordinator of EPP PhD admissions, Dr Elisabeth Falk: [E.Falk@sussex.ac.uk](mailto:E.Falk@sussex.ac.uk).

Applications: <https://www.sussex.ac.uk/study/phd/apply>

Please state in the Finance section of the online form that you are applying for STFC EPP studentships.