



PhD studentship on ATLAS Electroweak SUSY searches

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

The Sussex ATLAS group is one of the leaders in the search for Beyond the Standard Model (BSM) physics in Electroweak Supersymmetry (SUSY) models. The successful applicant for this project will lead the search for SUSY in ATLAS data with specific emphasis on the production of SUSY particles via Vector Boson Fusion (VBF) and Initial State Radiation (ISR). These events are characterised by final states with two taus, one or two jets, and missing energy coming from the decay of the SUSY particles, and are expected to give competitive sensitivities for SUSY searches in Run-3 of the Large Hadron Collider (expected to start towards the end of 2021), as well as at the future High-Luminosity LHC (HL-LHC). The student will apply new data science techniques (ML, MVAs, etc) and/or identify new variables, as well as study possible new triggers for the analysis. In addition to the data analysis work, the student will take part in the ATLAS Detector operations through work on the ATLAS Trigger system. The Sussex group is leading the ATLAS Inner Detector (ID) trigger system, and the student will work on the development, testing and commissioning of ID trigger algorithms to efficiently select electron-, muon- and tau-triggered events at the start of (and during) Run3 of the ATLAS experiment.

Funding is available for a September 2021 start which includes a tax-free bursary (expected to be £15,560 per annum in 2021/22) and fully paid tuition fees for 3.5 years. 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 more details about the project, please contact Prof. Fabrizio Salvatore: P.F.Salvatore@sussex.ac.uk).

For practical questions about applications and/or eligibility for funding, please contact mpsresearchsupport@sussex.ac.uk

For academic questions please contact the coordinator of EPP PhD admissions, Dr. W. Clark Griffith: W.C.Griffith@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.