



2023 Helmholtz – OCPC – Programme for the involvement of postdocs in bilateral collaboration projects

PART A

Title of the project:

ATLAS Detector Upgrade

Helmholtz Centre, division:

DESY-FH

Project leader:

Prof. Dr. Ingrid Maria Gregor

Contact Information of Project Supervisor: ingrid.gregor@desy.de**Web-address:**

<http://atlas.desy.de/>

DESY Group:

ATLAS

DESY-OCPC Programme Coordinator (Email, telephone and telefax)

Frank Lehner; frank.lehner@desy.de; +49 40 8998 3612

Description of the project:

The DESY ATLAS group is heavily involved in the Phase-II Upgrades of the ATLAS Detector at the LHC at CERN. The Phase-II upgrades will enable ATLAS to fully exploit the increased Luminosity of the High-Luminosity LHC, which is planned for 2027. The group is going to build an end-cap with about 30 m² of silicon for the new silicon strip detector as part of the new inner tracking system of ATLAS. We are presently preparing for the construction of the detector by participating in the detector simulation effort and the layout process, by building and testing prototypes and by planning the infrastructure needed for its assembly. In addition, we are contributing to the developments of silicon modules, electronics and mechanics for the future detector and are very active in test beam studies of the various prototypes, also using the local electron test beam at DESY. The preparations of the production are almost complete and in 2023 we are starting the production of parts such as silicon strip modules. In parallel we are working on the system test which will also take place at DESY. In this test a segment with up to 12 substructures (each with 18 modules) will run in parallel to do a final check of the full electronics and readout chain. The successful candidate will be expected to participate in at least one of these activities.



Description of existing or sought Chinese collaboration partner institute:

There are a number of Chinese institutions involved in ATLAS and also the ATLAS ITk project with possible interested candidates.

Institute of High Energy Physics Beijing

Hefei University of Technology

School of Physics and Astronomy Shanghai Jiao Tong University

Required qualification of the postdoc:

- PhD in experimental particle physics
- Experience with particle physics detectors (preferred silicon detectors)
- Additional skills in computing (data analysis)
- Language requirement: good English in writing and speaking