

Postdoctoral Position on ATLAS Data Analysis

at the Max Planck Institute for Physics (MPP) in Munich, Germany

Job opening: <https://inspirehep.net/jobs/2699815>

Application deadline: November 30th, 2023

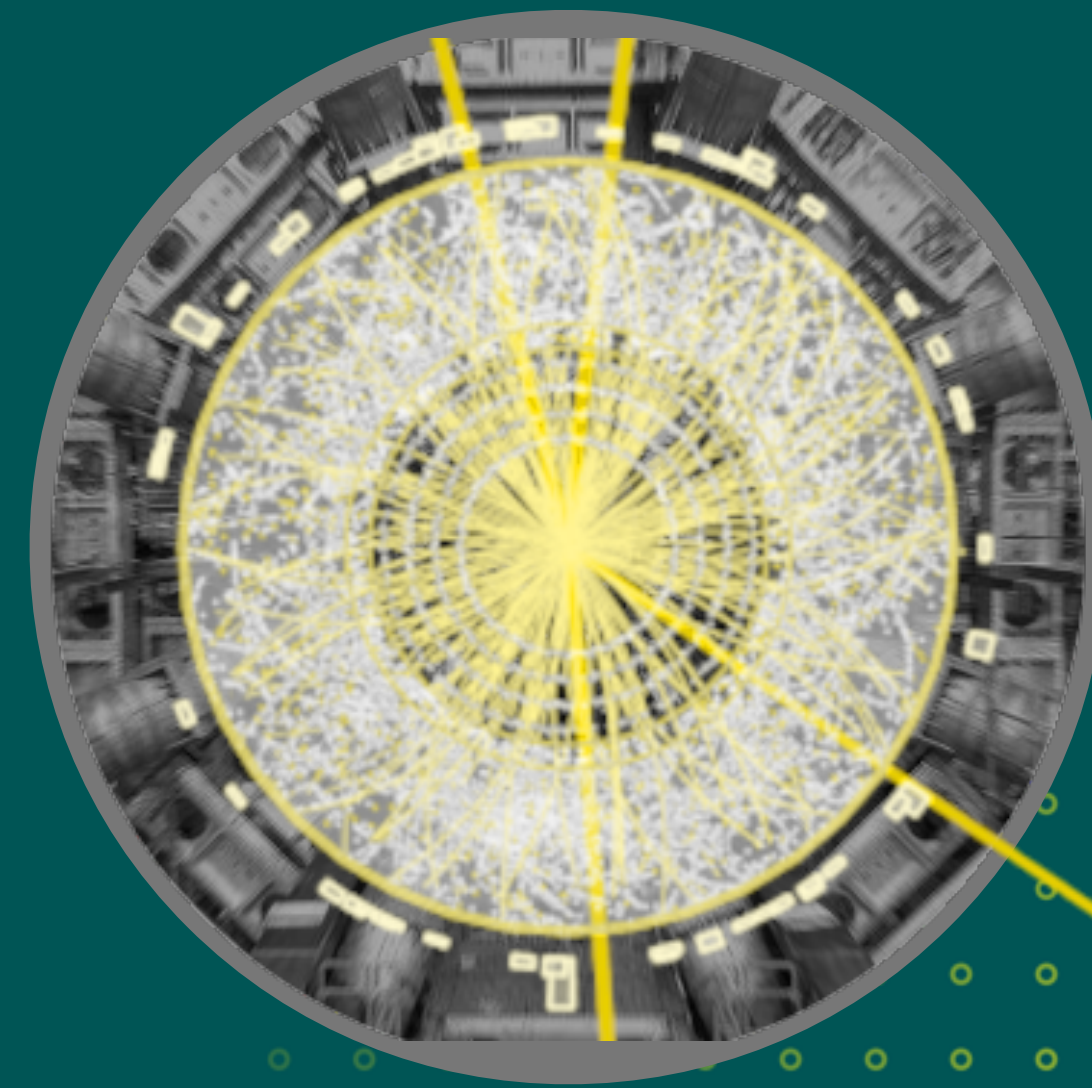
Contact:

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Independent Research Group Leader

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The ATLAS Muon Group at the MPP is one of the founding members of the ATLAS Collaboration. Our long-standing data analysis program spans the Higgs boson discovery and subsequent Higgs boson property measurements, as well as the direct searches for additional BSM Higgs bosons, Supersymmetry and Dark Matter.

The successful candidate should play a leading role in the Higgs Boson Data Analysis, spanning the following research activities:

- Measurements of the Higgs boson production and decay properties, ideally focusing on the four-lepton Higgs decay channel.
- Combination and interpretation of the Higgs boson data.

Recent MPP publications related to the advertised research topic:

- [Eur. Phys. J. C 80 \(2020\) 957](#) : Higgs cross-section measurements in the $H \rightarrow ZZ^* \rightarrow 4\ell$ channel
- [arXiv:2304.09612](#) : Search for CP-violation in the $H \rightarrow ZZ^* \rightarrow 4\ell$ channel
- [Nature 67 \(2022\) 52-59](#) : A detailed map of Higgs boson interactions
- [ATLAS-CONF-2023-052](#) : Combined EFT interpretation of Higgs boson interactions
- [ATL-PHYS-PUB-2022-037](#) : Global EFT interpretation of Higgs and weak boson data

The successful applicant will be working on a daily basis with the following group members:

Sandra Kortner (Group Leader), Alice Reed (PhD Student), Luca Spitzauer (Master Student),
2-3 Bachelor Students rotating on a regular basis. Additional PhD and Master students expected next year.

Further members of the ATLAS Muon Group at the MPP:

M. Kado (Director), O. Kortner (Group Leader), D. Buchin (PhD, Leptoquarks), D. Cieri (Senior, Muon Trigger), F. Fallavolita (Postdoc, Muon Detector), S. Grewe (PhD, BSM Higgs), M. Holzbock (Postdoc, BSM Searches), H. Kroha (Senior, Muon Det.), G. Proto (Postdoc, Muon Det.), E. Voevodina (Postdoc, Muon Det.)

Collaboration with the associated **research group of Lukas Heinrich** at the Technical University Munich (Data Science in Physics).

Collaboration with the scientists of the **Excellence Cluster "Origins"** at the Campus Garching Research Center.





New MPP Building at the Campus Garching
The institute is moving to the new building in November 2023.

Brand new office space :-)

The position is based at the MPP: Boltzmannstr. 8, 85478 Garching, Germany.

30 minutes away from the Munich city center by the public transport.

Regular travel to CERN e.g. for workshops, meetings or collaborative work with the analysis team.
Teleworking from home is possible on an occasional basis, given the manager's approval.

The Max Planck Society strives for gender equality and diversity. The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. Furthermore, the Max Planck Society seeks to increase the number of women in those areas where they are underrepresented and therefore explicitly encourages women to apply.

Requirements:

A PhD in particle physics and significant experience in data analysis are required. Important additional assets are good programming skills, experience with fitting methods and tools, as well as the knowledge of modern machine learning techniques. Participation in hardware activities of the group is optional.

Contract conditions:

- Salary and benefits are according to the German public service pay scale (TVöD Bund).
- The contract is initially limited to two years and can be extended in accordance with German law and available funding.

