

# Postdoctoral research position (f\*m)

## in physics with trapped positrons for antihydrogen production

The Stefan Meyer Institute for Subatomic Physics of the Austrian Academy of Sciences in Vienna ([www.oeaw.ac.at/smi](http://www.oeaw.ac.at/smi)) is devoted to the study of fundamental symmetries and interactions using antihydrogen. A postdoctoral researcher position of 40 hours per week (duration 2 years) in the “Precision experiments at low energies” division is open for applications.

The successful candidate will join the ASACUSA collaboration working on measurements of the hyperfine structure of antihydrogen (for more details see [www.antihydrogen.at](http://www.antihydrogen.at) and [home.cern/science/experiments/asacusa](http://home.cern/science/experiments/asacusa)). The position is open for a duration of 24 months during which time the candidate will be seconded to CERN.

### Role

The position is part of the ASACUSA collaborations work to perform precision spectroscopy of the ground state hyperfine structure of antihydrogen, to set stringent constraints on exotic physics beyond the standard model. The successful candidate will become responsible for running and developing positron handling. As such, any experience of positron science techniques such as source handling, moderation, Penning-Malmberg buffer gas traps, and detection methods would be an advantage.

Production of cold positron plasmas for antihydrogen production is essential, hence continuous development of manipulation techniques to achieve this will be one of the main responsibilities. It is also expected that a new positron accumulation trap will be developed in the course of this project.

The candidate will take part in ASACUSA’s antiproton beam time campaigns in CERN’s antimatter factory.

The position is part of the new antimatter junior group at SMI lead by Dr D. J. Murtagh. The group consists of two postdocs a PhD student and an MSc student who will all work closely together to perform antihydrogen research.

## **Requirements**

Applications are invited from outstanding candidates with a PhD in a relevant field (e.g. atomic physics, trap physics, plasma physics). Knowledge of common experimental techniques such as UHV, magnets, detectors (e.g. MCP/PMT), electronics, experiment design and gas handling etc as well as excellent communication skills both oral and written are required. The candidate must be fluent in English and any experience of French would be an advantage.

## **Offer**

Contracts will have a duration of two years. The minimum annual gross salary before tax will be 42.552 EUR based on the Academies scheme VG 4/2. An additional allowance will be available due to the secondment to CERN of 12.720 EUR per year.

## **Application**

CV, cover letter and details of three referees should be submitted to [smi@oeaw.ac.at](mailto:smi@oeaw.ac.at) before the 30<sup>th</sup> November 2019, the position is available from April 2020. For informal enquiries and more information please email: [dan.murtagh@cern.ch](mailto:dan.murtagh@cern.ch)