

Job ID: SMI011DOC123

The Stefan Meyer Institute for Subatomic Physics (SMI) of the Austrian Academy of Sciences in Vienna (OeAW) is devoted to the study of fundamental symmetries and interactions. In its division “Precision experiments at low energies”, a new

PHD STUDENT POSITION (F/M/X) *in (anti)hydrogen research* (part-time, 30h per week)

(duration 3 years) is open for applications. The successful candidate is expected to start no later than June 01st, 2023.

Your tasks:

The PhD thesis will take place within the ASACUSA collaboration which aims at measuring the ground state hyperfine splitting GS-HFS of hydrogen and antihydrogen to provide a sensitive test of CPT symmetry. The successful candidate will be responsible for the hyperfine spectroscopy measurements. Experiments with antihydrogen will commence in fall of 2023. Experimental activities will focus initially on the implementation of an existing Rabi type spectrometer in the ASACUSA antihydrogen setup at the AD/ELENA facility of CERN, characterize and compensate stray magnetic fields, and perform first GS-HFS measurements with antihydrogen. In a second task the accuracy of the experiment has to be improved by reducing the velocity of the beam and implementing a Ramsey method. This will be first done using the hydrogen beam at SMI and applied to antihydrogen after the Rabi measurements have been concluded.

Your profile:

Applications are invited from candidates with a Master (or equivalent) degree in a relevant field (e.g., low energy precision physics using atomic physics methods). Basic knowledge of either atomic beam preparation, manipulation, and spectroscopy or comparable methods in low-energy ion beam manipulations are required. Experience with the Ramsey method will be a key advantage.

Any experimental experiences working with UHV systems, cryogenics, microwave technology, magnetic and electric field generation, detectors, data acquisition, and characterization techniques of low-energy experiments are an important asset. Specific programming skills like particle tracking, C++, GEANT4, ROOT, or LabVIEW would be advantageous. The candidate will be expected to take part in beam-time campaigns at CERN for several months per year.

Applicants should have good communication skills and very good English language skills. Any experience of either German or French would be an advantage.

Our offer:

We offer an annual gross salary of € 32.297,58 in accordance with the salary scheme of the Austrian Academy of Sciences. The current call for applications **ends on March 31st, 2023**. Applications should be submitted per email to smi@oeaw.ac.at referencing Job-ID: SMI011DOC123, including CV, letter of motivation, graded study records, and a recommendation letter of your Master’s thesis supervisor. The selection is a rolling procedure, thus early applications have an advantage. For informal enquiries and more information please email eberhard.widmann@oeaw.ac.at.

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.