

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

Ph.D. position (f/m) in (anti)hydrogen research (75%)

(duration 3 years) is open for applications.

Position

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 tests of CPT symmetry. During the Long Shutdown 2 of CERN 2019-2020 no antiprotons will be available, so experimental activities will focus initially on experiments using a polarized hydrogen beam developed by ASACUSA and installed at CERN.

The first task is to perform measurements of coefficients of the Standard Model Extension framework using the existing hydrogen beam. In the second part of the thesis the accuracy of the experiment has to be improved by reducing the velocity of the beam and employing a Ramsey method currently under development. The participation in first GS-HFS measurements with antihydrogen is possible from 2021.

The successful candidate is expected to start not later than Sep. 1, 2019 and will participate in the graduate school Particles and Interactions www.dkpi.at.

Requirements

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.

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.

Offer

The contract will have a duration of three years. The annual gross salary will be 30.273,60 EUR in accordance with the salary scale of the Austrian Science Fund.

The Austrian Academy of Sciences is an equal opportunity employer.

Application

Candidates pass through the application and selection procedure of the DK-PI doctoral program. The current call for applications ends on May 31, 2019. Applications should be submitted through the electronic application form (www.dkpi.at/application-form).

For informal enquiries and more information please email eberhard.widmann@oeaw.ac.at.