

Helmholtz – CSC – Fellowships 2010

- Helmholtz Centre:** Research Centre Jülich – (www.fz-juelich.de/portal/home)
- Research Field:** Structure of Matter, Physics of Hadrons and Nuclei
- Research Project:** Open and hidden charm physics at PANDA
- Position:** PhD Student Sandwich PhD Student Postdoc
- Department/Supervising scientist:** Institute for Nuclear Physics, Experimental Hadron Structure, IKP 1, Prof. Jim Ritman

Research Area:

The Antiproton Annihilation at Darmstadt Experiment, PANDA, is one of the main experiments within the future accelerator complex FAIR. Its purpose is the study of strong force in the transition region between perturbative and non-perturbative QCD. It utilises an antiproton beam with high luminosity and excellent momentum resolution which is shot onto various fixed target materials. The interaction products are studied with a complex set of sub-detectors ranging from high precision particle tracker devices, different detectors for particle identification, and high resolution energy calorimeters. The focus of the work for PANDA within our working group lies on the development of a fast high resolution micro vertex detector, MVD, and the study of the physics channels where it is most used for. This work covers a wide variety of different aspects from electronics and hardware development over CAD design up to physics and detector simulations within the PANDA software framework based on C++ and ROOT. Different doctoral thesis topics are available on all aspects of the development work for PANDA. These theses offer the opportunity to work within an active international collaboration on one of the hot research topics within the field of hadron physics.

Specific Requirements:

Master's thesis in nuclear or particle physics. English is the working language. Knowledge of C++.

- Work Place:** Research Center Juelich, Germany (near Cologne)
- Earliest Start** September 2010
- Language Course:** A German language course will be offered parallel to the project
- Further Information:** j.ritman@fz-juelich.de; <http://www.fz-juelich.de/ikp/panda/>

Address for application: Prof. J. Ritman, Research Centre Jülich
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