Postdoctoral position in the DarkSide-20k experiment

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Job Summary

The experimental particle astrophysics group at Queen's University in Kingston, Canada, which is part of the McDonald Institute (https://mcdonaldinstitute.ca/), expects to hire a postdoc to work on the argon dark matter search DarkSide-20k with Professors Philippe Di Stefano, Art McDonald and Peter Skensved, and with scientists at the TRIUMF laboratory. The postdoc will be actively involved in the development of digital electronics and DAQ for the DarkSide-20k experiment at Gran Sasso with 20 tonnes fiducial of liquid argon extracted from an underground source. This system is being designed to collect waveforms from approximately 12,000 channels, process them on the fly and reduce this large data set to a manageable size for storage. All of this is to be done in a pipeline scheme at high rate in order to cope with the large amount of raw incoming events in the detector. This experiment is a stepping-stone towards a 300-tonne fiducial detector, Argo, for which the preferential location is SNOLAB. Work will be carried out in conjunction with the TRIUMF laboratory in Vancouver, with CERN, and with Gran Sasso.

Required Qualifications

- Candidates must have obtained a PhD in physics or applied physics, with a specialization in particle physics, nuclear physics, or instrumentation. In exceptional circumstances, PhD candidates with a firm date of defense will be considered.
- The ability to perform independent research and to communicate results verbally and in writing.
- The ability to work in a team including both graduate and undergraduate students.

Preferred Qualifications

- Experience with particle detectors, including readout, and scintillators.
- Knowledge of liquid argon.
- Experience in rare-event searches and with low backgrounds.
- Proficiency in python and root.

Start Date, Duration, and Remuneration

Full-time 1 year appointment starting Winter 2020, with renewal for 1 or 2 years subject to funding and performance. Remuneration will be in the range of 52-55 k$/year depending on experience.

Application

Provide cover letter, full CV (including link to doctoral dissertation), 2 letters of recommendation (sent directly from the official email of the referee) to P. Di Stefano (distefan@queensu.ca). Review of applications begins November 08 2019; applications will be considered until the position is filled.

EMPLOYMENT EQUITY: The University invites applications from all qualified candidates. Queen's is committed to employment equity and diversity in the workplace and welcomes applications from women, visible minorities, Aboriginal peoples, persons with disabilities, and persons of any sexual orientation or gender identity. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. The University will provide support in its recruitment processes to applicants with disabilities, including accommodation that takes into account an applicant's accessibility needs. For more information about the position, and accommodations during the interview process, please contact P. Di Stefano (distefan@queensu.ca).