

Postdoctoral Position on the COHERENT and HALO-1kT Experiments

The Department of Physics at Laurentian University invites applications for a postdoctoral position in support of research efforts on the COHERENT experiment, presently taking data at ORNL's Spallation Neutron Source (SNS), and the HALO-1kT supernova neutrino detector, currently under development for siting at LNGS in Italy. The position will be based at Laurentian University in Sudbury, Ontario and may involve travel to Oak Ridge, Tennessee, and Assergi, Italy. The position is funded by the McDonald Institute and the successful candidate will benefit from Laurentian's close ties to the vibrant research environment at SNOLAB, also in Sudbury. Laurentian is a founding member of both SNOLAB and the McDonald Institute.

The research program is focused on the exploitation of lead-based supernova neutrino detectors as a robust, low cost and low maintenance technology that can provide complementary neutrino flavour sensitivity to existing supernova detectors. The intense pulsed neutrino emission, at the SNS, from pion decay at rest, makes possible the measurement of neutrino-lead cross sections at supernova relevant energies, critical to the full interpretation of supernova data from the existing HALO detector at SNOLAB and the proposed HALO-1kT detector at LNGS. The COHERENT collaboration has recently reported the first observation of coherent elastic neutrino-nucleus scattering at the SNS and the successful candidate will contribute to the ongoing program of cross section measurements. The availability of 1000 tonnes of lead following the decommissioning of OPERA at LNGS has opened an exciting window for the construction of a new lead-based supernova detector. The HALO-1kT collaboration is preparing an experimental proposal and the successful applicant will also contribute to the detailed design.

A Ph.D. in experimental particle or nuclear physics, or a closely related field is required. Direct experience in detector design, construction, operation and data analysis is highly valued as is a level of familiarity or proficiency with C++, ROOT, Python and GEANT4. Candidates are requested to highlight their relevant skills and experience in their applications.

The initial appointment will be for two years with the possibility of renewal. Candidates should forward a Curriculum Vitae and a statement of research interests, by email only, and arrange for three reference letters to be sent directly to:

Prof. C.J. Virtue (cjv@snolab.ca)
Spokesperson, HALO-1kT

Review of applications will begin Sept. 15th,
2018 and continue until the position is filled.

Laurentian University is committed to employment equity, welcomes diversity in the workplace and encourages applications from all qualified individuals including women, members of visible minorities, Aboriginal persons, and persons with disabilities. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.