LaurentianUniversity
UniversitéLaurentienne

Postdoctoral Position in Experimental Neutrino Physics on EXO

Applications are invited for a postdoctoral position, available from Nov 1st, 2010, with the Particle Astrophysics Group at Laurentian University in Sudbury, Canada, to support research efforts on EXO, the Enriched Xenon Observatory. The Particle Astrophysics Group at Laurentian University provides a dynamic environment and maintains very strong interactions with nearby SNOLAB. The group's other research interests are SNO+, PICASSO, HALO and DEAP/CLEAN.

The EXO collaboration searches for neutrino-less double beta decay in ^{136}Xe and conducts a three components program to build a multitonne detector, Full EXO. EXO-200 is a prototype detector with a source mass of 200 kg of enriched liquid xenon and is currently under commissioning at the WIPP underground site in New Mexico. EXO-200 will measure the 2νββ transition rate and test the 0νββ transition rate down to an effective neutrino mass close to 100 meV. EXO-200 will also define the design of a liquid xenon version of Full EXO. In parallel, the collaboration is actively working on the development on a gas version of Full EXO, with the construction of XEL, a 10 kg prototype based on electroluminescence. XEL will be operated underground at SNOLAB. The EXO collaboration is also developing an innovative tag for ^{136}Ba^{+}, the daughter ion of ^{136}Xe, as a powerful tool for background suppression. The Ba tagging will be an essential component of Full EXO. Laurentian's commitments to EXO include the mitigation and assessment of trace radionuclides, the calibration of EXO-200 and the development of a Gas Full EXO Detector.

The successful candidate will take leading roles in one or more of these areas. Demonstrated experience with detector development and/or ultra-low backgrounds is required; experience in radiochemistry is an asset. Experience with Fortran, ROOT, GEANT4 and particle physics data analysis is required. Candidates must have a recent PhD in experimental particle physics, nuclear physics or radiochemistry. The initial appointment will be for two years, renewable to a third year. Applicants should forward a Curriculum Vitæ, a statement of research interests, and arrange for a minimum of two reference letters to be sent directly to Prof. J. Farine, Department of Physics, Laurentian University, 935 Ramsay Lake Road, Sudbury Ontario, P3E 2C6 Canada (farine@snolab.ca, +1-705-675-1151 ext 2233). Applications by email are welcome.

Applications will be accepted until the position is filled.

Laurentian University is committed to equity in employment and encourages applications from all qualified applicants including women, aboriginal peoples, members of visible minorities, and persons with disabilities.