



## Postdoctoral Fellow on the AMS Characterization of Materials for the nEXO Experiment at Carleton University

The nEXO group at Carleton university, with support from the Canadian Particle Astrophysics Research Center, has a **postdoctoral fellowship position** open. The nEXO project is the leading candidate for the next-generation neutrino-less double beta ( $0\nu\beta\beta$ ) decay search, for which it is proposed to install a 5-tonne enriched liquid xenon time project chamber (TPC) at SNOLab. In preparation, the collaboration is conducting an intense R&D program to ensure that world-best detection sensitivity is achieved by nEXO. To reduce interferences from naturally occurring radioactive elements in the materials used to build this detector, AMS techniques will be developed and used to select materials with the minimum possible concentration of these elements. AMS work will take place at the A. E. Lalonde AMS Laboratory at the University of Ottawa.

The successful candidate will be expected to work approximately 50% of their time on the AMS project goals and, in addition, assist the Carleton group with research on the single Ba ion detection and isotopic identification for a possible future upgrade of nEXO.

Candidates are expected to have a background in AMS, particle or nuclear physics with a **proven disposition toward experimental techniques, instrumentation development and experience manipulating ionizing particle detectors**. Graduate and undergraduate students are already engaged in these programs and the postdoctoral fellow is expected to **participate in student supervision**. The group also contributes to the operation of the  $0\nu\beta\beta$  prototype EXO-200 and, historically, graduate students and postdoctoral fellows have participated in data taking and analysis. A similar opportunity will be offered to future postdoctoral candidates, including **data analysis using sophisticated machine learning techniques**. The candidates are required to already have, or expected to obtain before employment, a Ph.D. degree in physics.

The EXO group at Carleton university is strongly committed to equity in employment and we welcome applications from all qualified persons, including women, indigenous people, ethnic minorities and persons with disabilities. Applicants should submit via email an application package which includes a **detailed CV**, a **research background and interests statement** which demonstrates appropriate skills and qualifications and arrange for **three reference letters** to be sent to Prof. Razvan Gornea using the address [gornea@zoho.com](mailto:gornea@zoho.com)