

MASc position in Applied Physics/Engineering

Project: Prof. Levente Balogh at the Arthur B. McDonald Canadian Astroparticle Physics Research Institute (MI) and the Department of Mechanical and Materials Engineering (MME), Queen's University is looking for a MASc student to participate in a research project setting up a quasi-monoenergetic neutron beam at the Reactor Material Testing Laboratory's (RMTL) proton accelerator facility to calibrate dark matter detectors. The student's project will focus on the engineering design of beamline structural components. This research is essential in understanding the response of dark matter detectors (gaseous -, semi-conductor -, liquid noble gas - and superheated liquid detectors) to the low energy nuclear recoils that are expected from WIMP (weakly interacting massive particle) interactions. The candidate will work closely with the NEWS-G collaboration and will have the opportunity to collaborate with other institutions affiliated with the MI and SNOLAB (Sudbury, ON).

With Nobel Prize winner Art McDonald, Queen's University is home to one of the strongest astroparticle physics groups in Canada. Queen's also hosts the Arthur B. McDonald Canadian Astroparticle Physics Research Institute, a partnership between 13 universities and research centres working to unite researchers, theorists and technical experts across Canada and internationally. Queen's University is located in historic Kingston on the shores of Lake Ontario and it is one of Canada's leading research-intensive universities.

Requirements: The MASc candidates should have interest in applied physics, engineering design of structural components or related fields. Some working knowledge of SolidWorks would be an asset. Candidates should have the willingness to learn new things and be motivated to solve problems from an interdisciplinary framework. By the start of the MASc position, the successful candidate should possess a BSc degree in applied physics or engineering.

The MASc student will be affiliated with MME and MI, and will work in close collaboration with the Department of Physics, Engineering Physics and Astronomy (PHYS). The position will be located in Kingston ON and funded for 2 years. The MASc program at MME is research based, it requires the completion of 4 term length courses and a thesis satisfactorily defended.

To apply: If interested, please send an email to Prof. Levente Balogh (levente.balogh@queensu.ca) with a CV and contact information for 2 referees.

Queen's 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, Indigenous peoples, persons with disabilities, and persons of any sexual orientation or gender identity. Queen's University recognizes and appreciates the value that diversity adds to its activities and initiatives.

Application deadline: open until filled. *Start date:* September 2019 or ASAP thereafter.

Arthur B. McDonald Institute (MI) <https://mcdonaldinstitute.ca>, NEWS-G collaboration <https://news-g.org>, RMTL <https://rmtl.engineering.queensu.ca>, SNOLAB <https://www.snolab.ca>, MME <https://me.queensu.ca/>, PHYS <https://www.queensu.ca/physics/home>, Graduate Studies at MME <https://me.queensu.ca/Graduate/index.html>