



Postdoctoral Researcher – DarkSide-20k

Comp. #653

[TRIUMF](#) is Canada's particle accelerator centre, and one of the world's leading laboratories for particle and nuclear physics and accelerator-based science. We are an international centre for discovery and innovation, advancing fundamental, applied, and interdisciplinary research for science, medicine, and business.

We are currently accepting applications for a Postdoctoral Researcher to work on the direct dark matter search with liquid argon detectors. DarkSide-20k, building on the success of the DarkSide-50 program, is a 20,000kg liquid argon Time-Projection-Chamber aimed at measuring WIMP-nucleus coherent-elastic scatter, with world competitive sensitivity. The primary focus of this position is the development of the data acquisition (DAQ) system for the DarkSide-20k experiment, which is expected to start data taking at the Laboratori Nazionale Del Gran Sasso early next decade. Alongside the expertise in the TRIUMF DAQ group, the successful candidate is expected to play a leading role in the development of the DAW systems for the DarkSide-20k detector and for the prototypes which will be operational between 2018 and 2021.

In addition to participation in the DarkSide-20k program, the position may also include a contribution to different aspects of the DEAP-3600 data-analysis or to the development of photo-detectors for future low-background experiments. The DEAP-3600 experiment is a 3,000kg liquid argon single-phase dark matter detector located 2km underground at the SNOLAB facility in Canada, and it has been collecting physics data since late 2016. TRIUMF is also active in the development of photo-detectors for future experiments focusing on analog silicon photo-multipliers SiPMs for the short-term and 3 dimensionally integrated digital SiPM for the long-term. This position is expected to either be 50% hardware (DarkSide-20k) and 50% analysis (DEAP-3600), or 100% detector development with twin focus on DarkSide-20k DAQ and next-generation photo-detector development.

Applicants must have a knowledge of particle physics and a strong computing background with significant expertise in C/C++ and UNIX/Linux. Experience in particle detector hardware and either data analysis or radiation detector development is required. The successful candidate must demonstrate initiative, good judgement and enthusiasm for tackling new problems, and be able to effectively build relationships and work together as a member of a team. Qualifications include a recent Ph.D. in subatomic physics or a related field, and those individuals who are expecting to complete a PhD within two months are also encouraged to apply.

While not required, experience in direct dark matter search, noble-gas liquid detectors, data acquisition systems or programming Field Programmable Gate Array would be a definite asset.

This Canadian Particle Astroparticle Research Center (CPARC) funded position will be based at TRIUMF and the term of employment will be two years. When submitting your application as detailed below, please include a detailed CV with a list of publications, and arrange for 3 letters of recommendation or reference to be sent directly to the email below.

TRIUMF is an equal opportunity employer committed to diversity in the workplace, and we welcome applications from all qualified candidates. Your complete application package should be submitted by email to recruiting@triumf.ca and will include the following in one complete PDF file:

- Subject line: Competition 653
- [Employment Application Form](#)
- Cover letter indicating salary expectations
- CV

Applications will be accepted until the position is filled