Department of Physics

University of Toronto
JOB POSTING – POSTDOCTORAL FELLOW

Area of Research: Experimental Astroparticle Physics

Description of duties: The University of Toronto SuperCDMS group invites applications for a Postdoctoral Fellow in experimental astroparticle physics.

SuperCDMS is a direct-detection experiment that searches for interactions of dark matter in cryogenic germanium and silicon detectors equipped with sensors for the thermal energy of particle interaction. The next generation of the experiment, featuring upgraded detector technology, is currently being installed in SNOLAB, an underground astroparticle physics facility located 2 km below the surface in the Vale Creighton Mine near Sudbury, Ontario. The international SuperCDMS collaboration aims for world-leading sensitivity to a variety of dark matter candidates and masses over the next decade. The cryogenic detector technology enables extremely low detection thresholds, while SNOLAB provides a low-background environment for these measurements.

The Toronto SuperCDMS group, led by Prof. Miriam Diamond, Prof. Ziqing Hong, and Prof. Pekka Sinervo, has a long-standing track record of significant contributions to dark matter research. Collaboration members contribute to detector calibration, data acquisition, event reconstruction, background modeling, statistical data analysis, and Monte Carlo simulations of detector response. The group operates a local cryogenic facility in Toronto for testing and R&D activities, and collaborates closely with SuperCDMS colleagues at SNOLAB in the operation of the experiment.

This position offers the opportunity to contribute meaningfully to multiple aspects of the experiment during the early stages of SuperCDMS SNOLAB data collection. The successful applicant will be based in downtown Toronto, with optional trips to Sudbury for on-site shifts at SNOLAB. Trips to Sudbury may involve work in underground laboratory environments; scheduling for travel and accommodations will be arranged in consultation with the successful candidate, with consideration of individual circumstances. Tasks performed in Toronto will include performing remote detector monitoring and operation in real-time for SuperCDMS SNOLAB, running simulations to investigate background sources and detector response, and leading offline statistical data analyses. Additional collaboration responsibilities may also include organizing meetings, documenting software, mentoring HQP, and reviewing and authoring internal reports as well as published papers. Responsibilities will be determined in consultation with the successful candidate and aligned with both the collaboration needs and professional development goals.

This is an exciting time to join the collaboration, with opportunities for hands-on involvement across multiple aspects of the experiment during the start of SuperCDMS SNOLAB science data-taking. The

broader dark matter direct detection field continues to expand its discovery potential across a range of models to finally resolve the longstanding questions at the forefront of modern astroparticle physics.

We recognize that research impact can be demonstrated in a variety of ways and welcome applications from candidates with diverse training paths and experiences in experimental astroparticle physics or closely related fields.

Required Qualifications:

- Ph.D. in experimental particle physics, experimental astrophysics, or other related research areas, by the time of the appointment.
- Experience in scientific communication and contributing to collaborative research projects in experimental physics
- Experience in statistical data analysis.
- Experience with large-scale detector simulations and high-performance computing systems.

Preferred Experience:

- Experience with cryogenic and/or low-background experiments.
- Experience with readout electronics and data acquisition systems.
- Advanced coding skills in C++ and Python.

Application instructions: All individuals interested in this position must submit a CV, a publication list, and a short statement of research interest to m.diamond@utoronto.ca with the subject line "Postdoctoral Fellow – Experimental Astroparticle Physics" by the closing date. Two letters of reference should also be sent directly by the referees to this address by the closing date; a third letter of reference will later be requested for short-listed candidates.

Closing date: Review of applications will commence on May 18 2026, and the opportunity will remain available until filled.

Expected start date: Aug 1 2026. The successful candidate will be required to demonstrate eligibility to work in Canada by two weeks before the start date. International applicants should assess work-permit and visa timelines at https://www.canada.ca/en/immigration-refugees-citizenship/services/application/check-processing-times.html

Supervisor: Assistant Prof Miriam Diamond

Salary: $86,500/year + 10.5% benefits

Travel: Trips to Sudbury (by automobile or commercial air carrier), and additional travel to other destinations (domestic and international) for conferences and workshops, will be optional.

Term: Two (2) years, with the possibility for extension considered on a yearly basis thereafter

FTE: This is a full-time position, and will require flexible scheduling for evening or overnight shifts for data-taking. Accommodations will be considered where appropriate.

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment) recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work.

Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement.
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Diversity Statement
Scientific research, education, and diversity of inquiry can only flourish if all participants are fully supported to contribute, realize their potential, and express themselves freely. The Department of Physics recognizes that opportunities for full participation have not been granted universally, and that barriers to participation exist today in the discipline of physics, including within our Department. Motivated by scientific excellence, fairness, and respect, we must create an inclusive, equitable, and welcoming environment that fosters a sense of belonging in the Department and University community.

All members of the Department of Physics, including faculty, staff, and students, are expected to create and maintain a kind and welcoming working and learning community. This responsibility is especially acute for those in any position of power, from professors to teaching assistants to study group leaders, who must lead by example and be mindful of unequal dynamics that can arise from hierarchy or social privilege. Discussions, conflict, and feedback should be conducted in a respectful way. It is everyone's responsibility to respect the rights of freedom of expression, academic freedom and freedom of research, and provide an environment free from prohibited discrimination and harassment, consistent with University of Toronto policies.

We recognize the challenges faced by Indigenous Persons, Racialized Persons, Women, Persons with Disabilities invisible or apparent, Members of the 2SLGBTQ+ Community, and other equity-deserving groups in the Department. We must strive to improve accessibility, well-being, and mental health support. We aim to develop new ways to support, engage with, and learn from Indigenous Peoples in our research, learning, and teaching. We commit to identifying and correcting biases and systemic inequities in our departmental activities and structures, including those which reflect or have their basis in harmful colonial ideologies, and to improve recruitment and retention of members of underrepresented groups. We commit to an ongoing conversation that includes all voices. We invite everyone to contribute to that dialogue, and share with us their lived experience in this Department.

Accessibility Statement
The University is committed to the principles of the Accessibility for Ontarians with Disabilities Act (AODA). As such, we strive to make our recruitment, assessment and selection processes as accessible as possible and provide accommodations as required for applicants with disabilities. If you require any accommodations at any point during the application and hiring process, please contact uoft.careers@utoronto.ca.