

Recruitment of a PhD student in Earth and Atmospheric Sciences Université du Québec à Montréal² (Montréal, QC, Canada)

Background: The [ARRIMÉ](#) project (Hazards, Risks and Resilience of Mining and Electrical Infrastructures), led by UQAM's [ESCER](#) (Regional Climate Study and Simulation) centre, aims to improve knowledge of the risks associated with hydrometeorological hazards in a context of climate change, in order to better anticipate the consequences of these hazards on [Hydro-Québec](#)'s activities, mining sector partners from the [IRME](#) (Institut de Recherches en Mines et Environnement, at UQAT-Polytechnique), and the Quebec Ministry of the Environment. The ARRIMÉ project is cofunded by the Natural Sciences and Engineering Research Council of Canada (NSERC, through the Alliance Grants).

Research to be carried out : As part of the ARRIME project, this study will take advantage of the new version of the Canadian Regional Climate Model (CRCM6-GEM5) developed at UQAM's ESCER center. The objective of this doctoral project is to quantify the distribution of water and energy available at the surface via the model's distinct reservoirs, and to determine to what extent the spatial resolution of CRCM6-GEM5 affects the water balance, surface fluxes and soil hydrology. The evolution of this distribution in a changing climate will also be studied, in order to quantify how surface thermodynamic processes (water and energy fluxes) affect the characteristics of precipitation extremes simulated by the CRCM6-GEM5 used in "convection-permitting" mode at very high resolution (2.5 km) over eastern Canada.

Program of study and research location: [PhD in Earth and Atmospheric Sciences](#), and [ESCER](#) Center at the Université du Québec à Montréal, Montreal, Canada.

Start date (doctoral program): September 2025.

Required Skills:

- **Mandatory:** A Master degree in atmospheric sciences or meteorology or in related fields (physical climatology or climate modelling).
- **Asset:** Experience in climate analysis and/or the development and use of high-resolution climate models.
- **Mandatory:** Excellent knowledge of programming in various languages (e.g. Fortran, C/C++, Matlab, Python or Julia, and R) under Linux/Unix environment and strong experience in handling large volumes of climate data (asset).
- **Asset:** Fluency in French (oral and written skills) and English (written skills).

Work environment: The project will be co-supervised by Philippe Gachon, a researcher at UQAM's ESCER center, and Biljana Music, a researcher at Ouranos and associate member of the ESCER center. The candidate will work closely with other researchers and students at the ESCER center.

Fellowships: The doctoral scholarship offered to the candidate will be \$CAN 20,000 per year, and will be in addition to an amount of \$CAN 13,000 over 3 years provided to all UQAM doctoral students.

How to apply: Interested candidates are requested to send a **CV, a cover letter and contacts of 2 reference persons** to gachon.philippe@uqam.ca and Music.Biljana@ouranos.ca before **May 15th, 2025**.

² UQAM contributes to the development of an environment conducive to equity, diversity and inclusion (EDI) in all spheres of activity, including obligations for research and creation. To do this, student recruitment procedures must ensure that minority groups are represented and promote their inclusion within research teams.