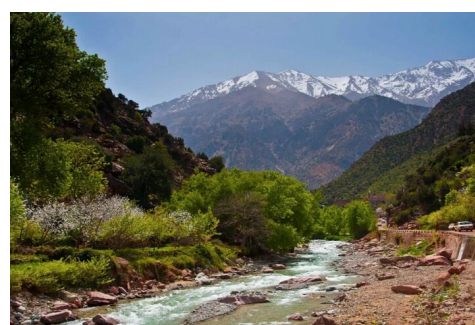
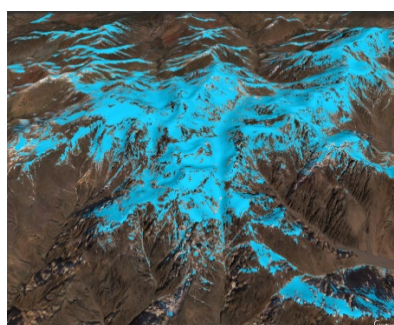


PhD position

Snow drought impacts on water resources in semiarid regions



Project

Ongoing climate change is causing reductions in snow accumulation and altering snowmelt rates, which has direct consequences on surface and groundwater water resources worldwide. Semiarid regions with scarce precipitation in summer are particularly vulnerable to periods with abnormally low snowpack, or “snow droughts”, which can have cascading effects downstream and lead to hydrological, agricultural and socioeconomic droughts. Recent advances in snow remote-sensing, modelling, and artificial intelligence opens new avenues to improve snow drought indicators and use them for seasonal forecast of hydrological drought.

This PhD project aims to explore the use of remote-sensing snow cover metrics combined with snowpack evolution models to develop snow drought metrics useful for seasonal hydrological forecasts in semiarid mountain regions.

A scholarship of 30 000 \$CAN/year is available for 4 years. Possible start dates are September 2025 or January 2026. The student will be supervised by Professor Christophe Kinnard (UQTR, Canada) and Abdelghani Boudhar (Cadi Ayyad University - UCAM), Morocco). This project is part of an international initiative between UQTR, UCAM and Mohammed VI Polytechnic University – UM6P in Morocco.

Institution

Université du Québec à Trois-Rivières (UQTR) is a medium-sized (15,000 students) university with a strong expertise in environmental sciences. Its research center on watershed sciences (RIVE) carries out multidisciplinary research on watershed hydrology and ecology. The student will be based at Glaciolab, led by prof. Kinnard, which focuses on snow and ice hydrology.

Required Qualifications and skills

- MSc degree in geography, geomatics, environmental science or engineering
- Strong geospatial data analysis skills
- Good programming skills (Python, R, Matlab or equivalent)
- Strong motivation, good communication skills and teamwork ability
- Good knowledge of French and/or English, oral and written

Application

Please email prof. Christophe Kinnard (christophe.kinnard@uqtr.ca) with your CV, a short cover letter, examples of previous research (MSc Thesis or published articles) and the names and contact of two references.