

JOURNÉE DE LA ROBOTIQUE UL 2023

Rétrospectif #5

Une initiative conjointe du



EXPLOITING UNLABELED DATA FOR SEMANTIC SEGMENTATION OF MOBILE LIDAR POINT CLOUDS USING A SEMI-SUPERVISED APPROACH

Reza Mahmoudi Kouhi, Étudiant au doctorat

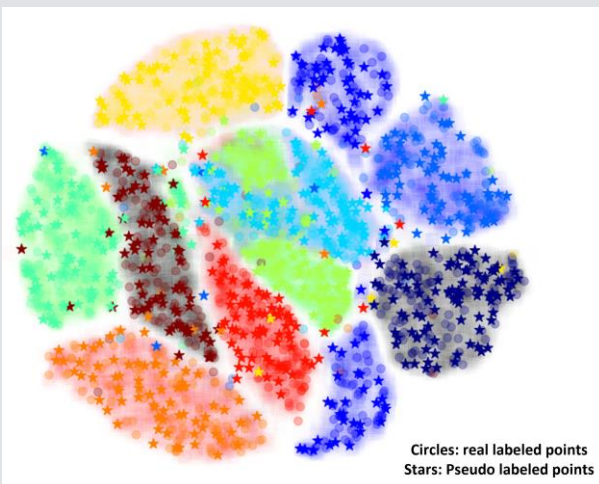
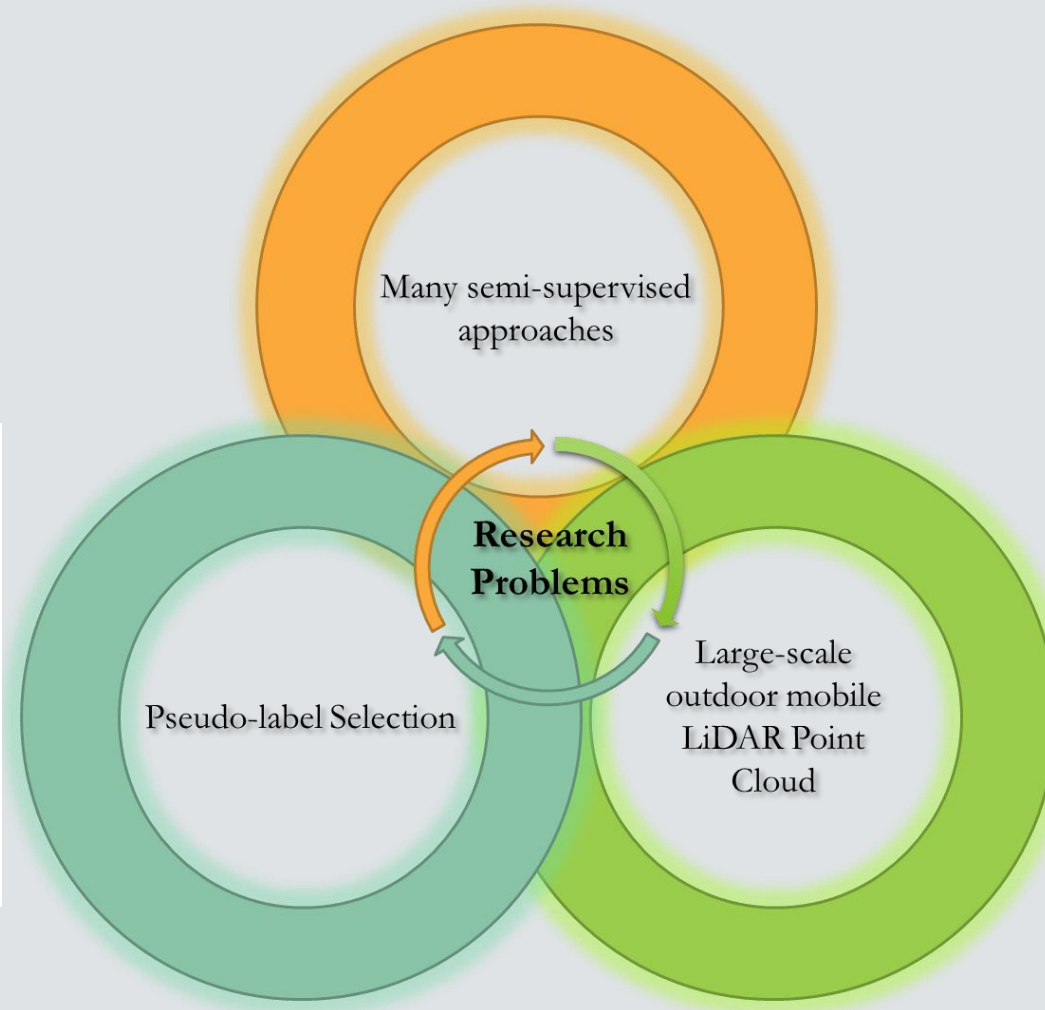
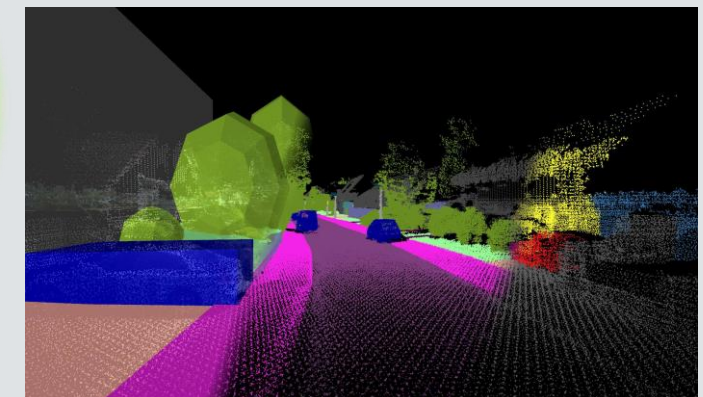
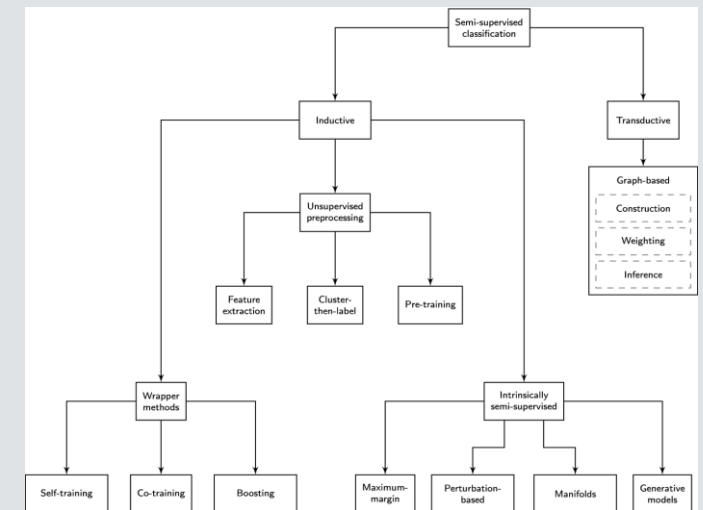
Sous la supervision de : Sylvie Daniel (Dpt. Géomatique) et Philippe Giguère (Dpt. Informatique)

CONTEXTE ET MOTIVATION



PROBLÉMATIQUE ET TRAVAUX DE RECHERCHE

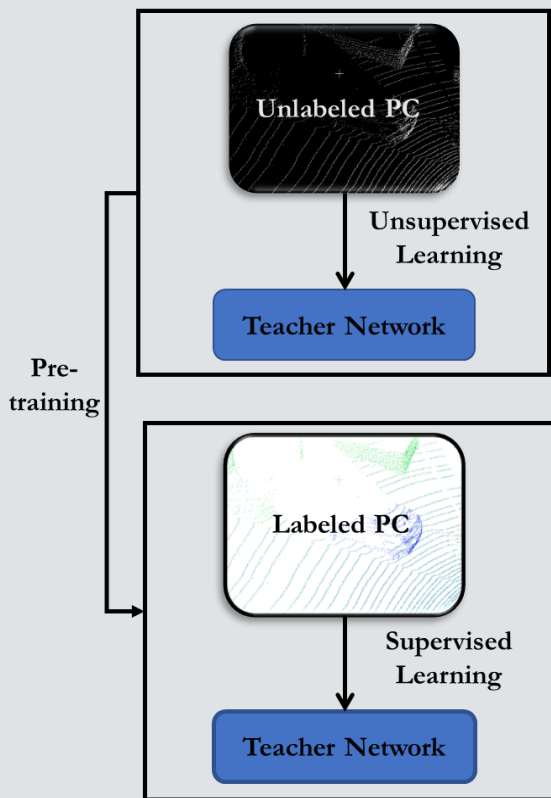
Semi-supervised Taxonomy



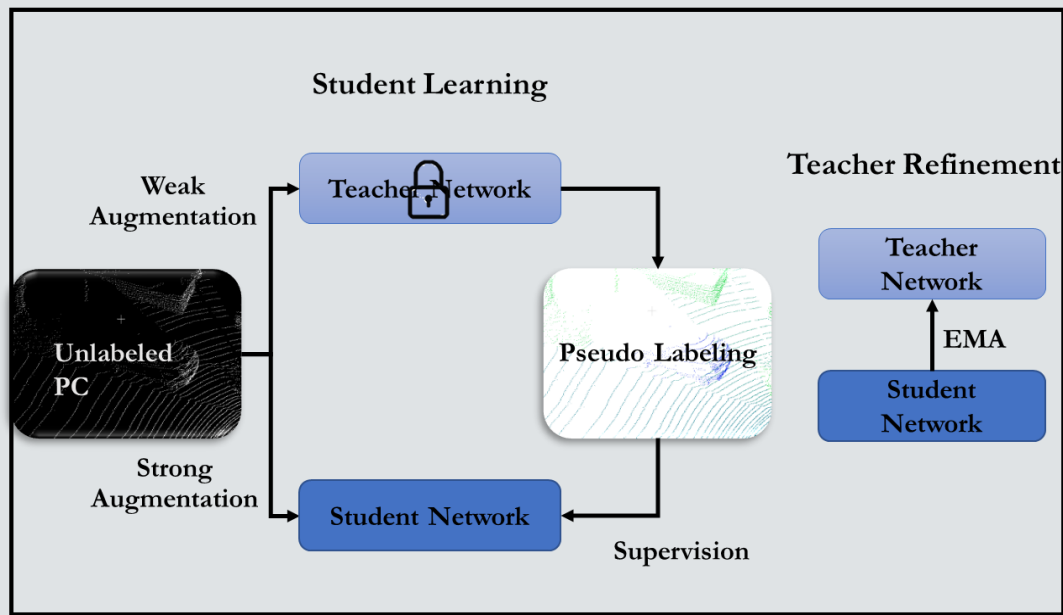
Circles: real labeled points
Stars: Pseudo labeled points

DISCUSSIONS ET RÉSULTATS

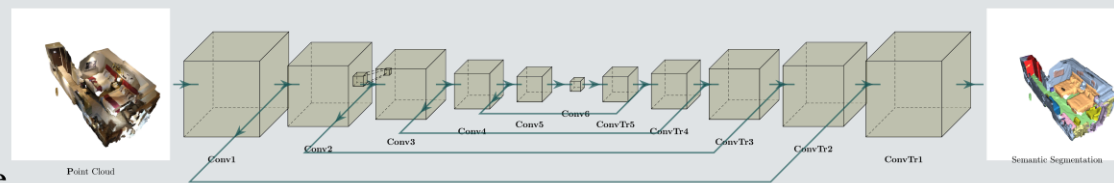
Burn-In Stage



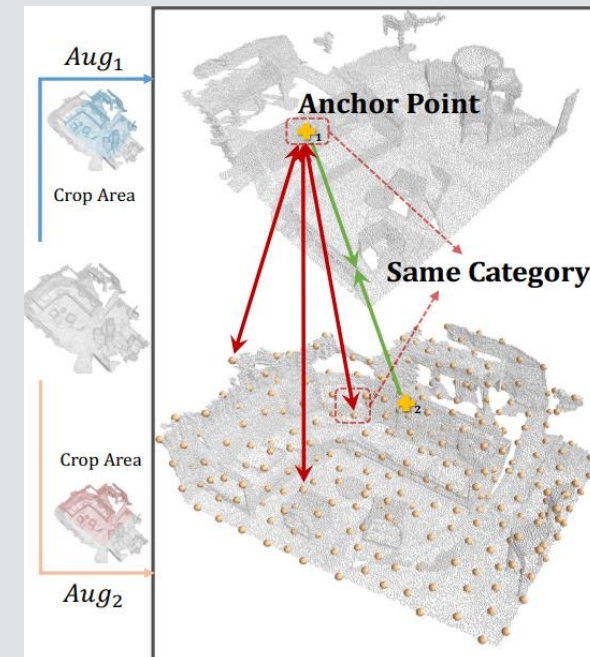
Teacher-Student Mutual Learning Stage



MinkowskiNet



Contrastive Loss



CARTOGRAPHIE PAR DRONE D'UN SYSTÈME TERRESTRE GLACIAIRE : UNE APPROCHE À HAUTE RÉOLUTION POUR COMPRENDRE LE RETRAIT COMPLEXE D'UNE MARGE GLACIAIRE (GROENLAND OCCIDENTAL)

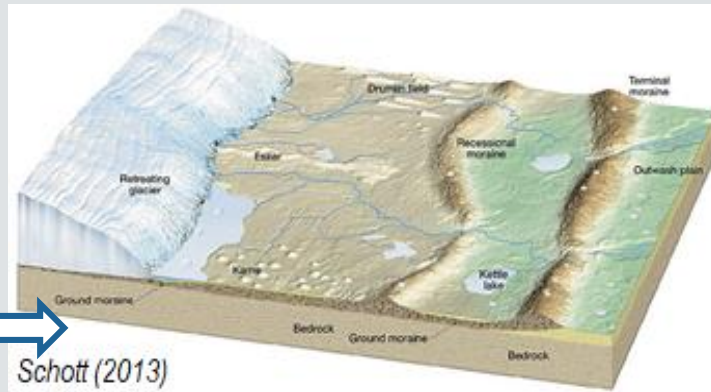
Jean-François Bernier, Professionnel de recherche

Sous la supervision de : Patrick Lajeunesse

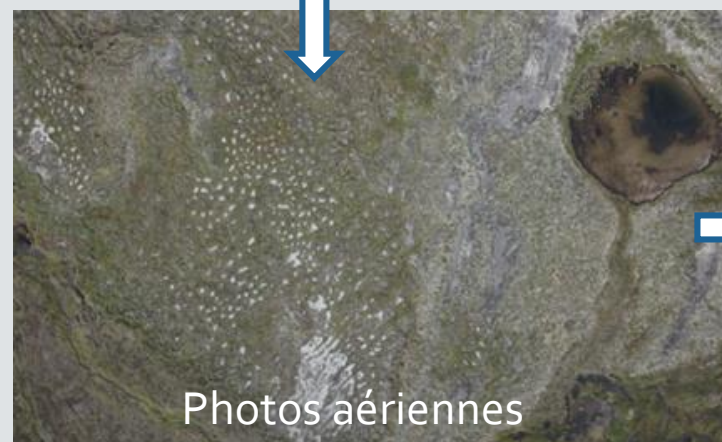
Laboratoire de géomorphologie Terre-Mer



PROBLÉMATIQUE ET TRAVAUX DE RECHERCHE À L'AIDE DE DRONE



Schott (2013)

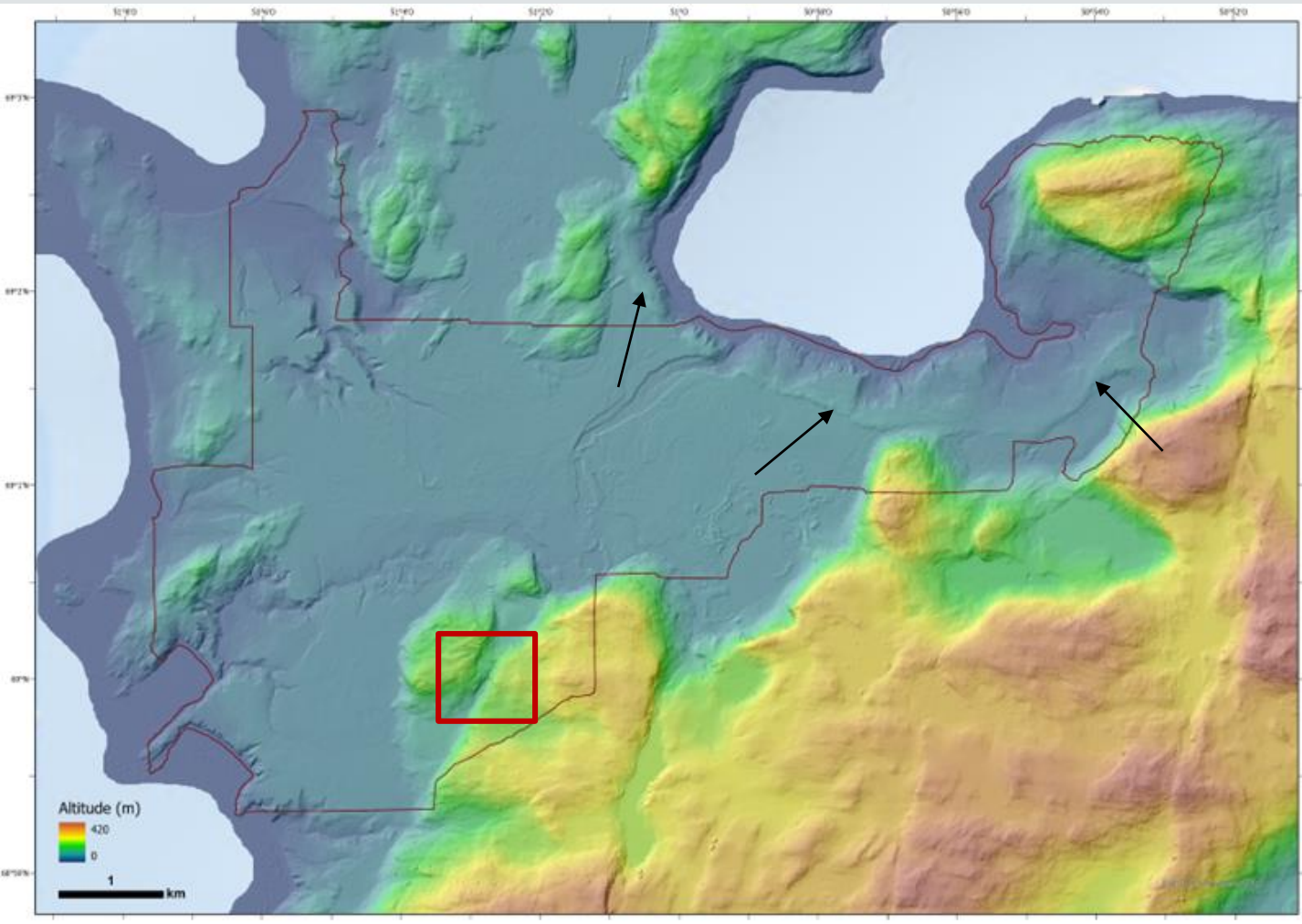


Photos aériennes

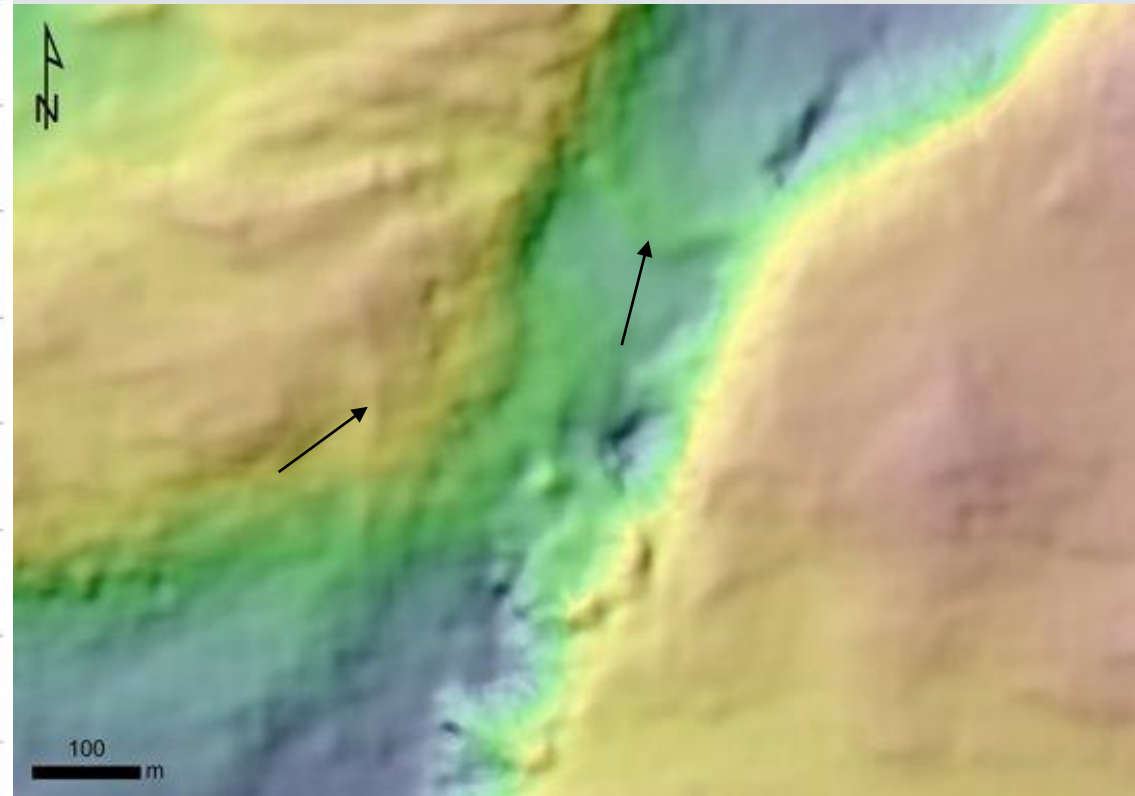


Nuage de points

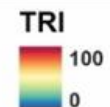
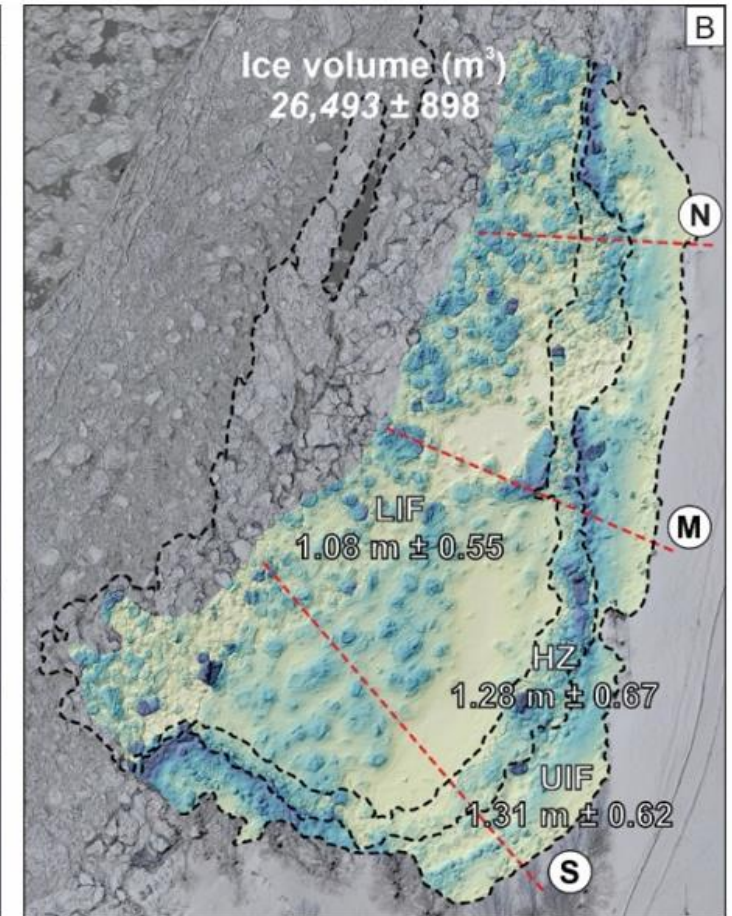
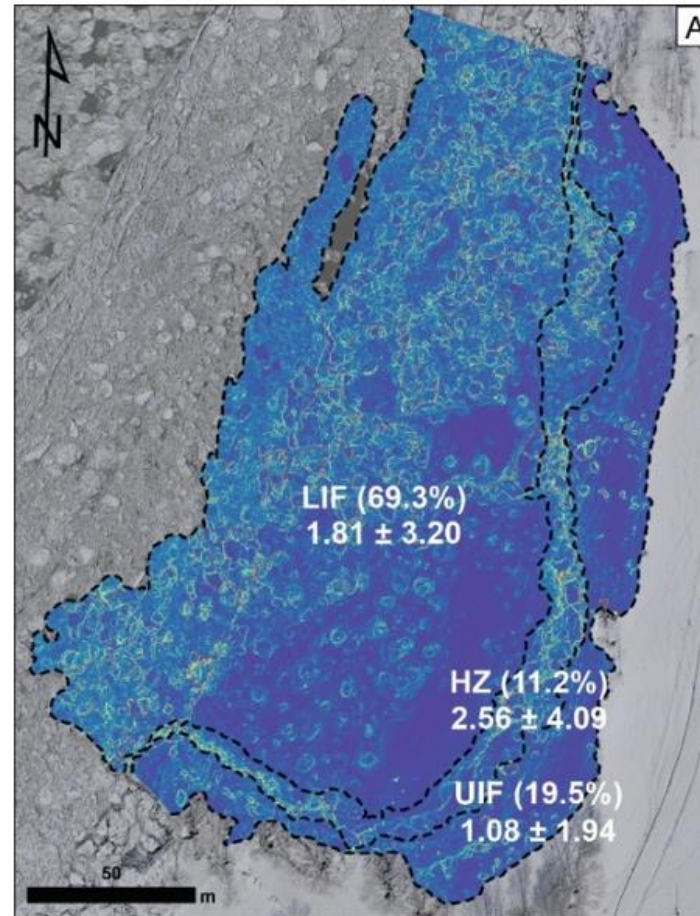
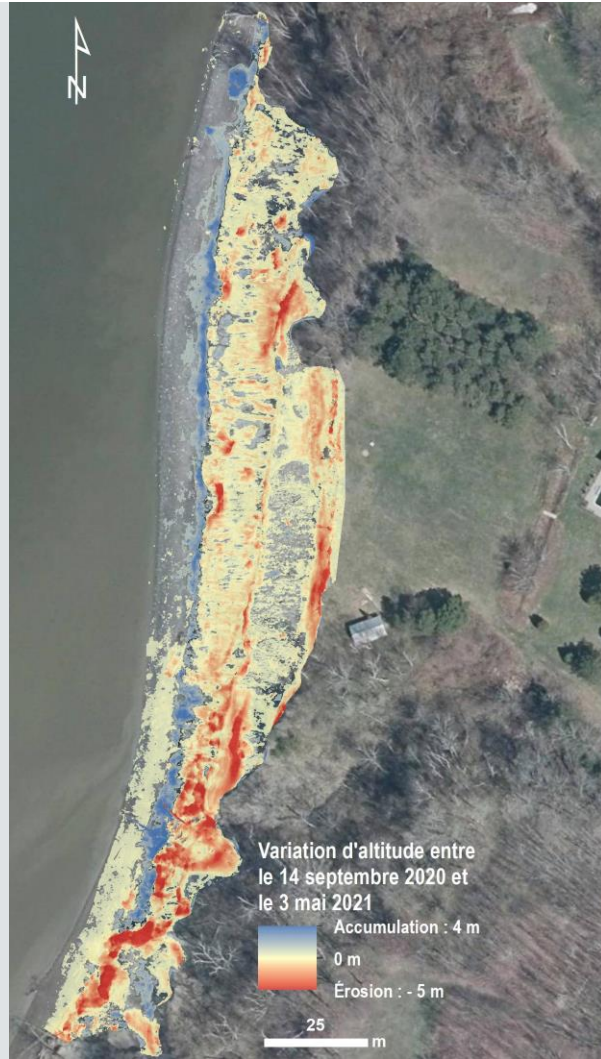
RÉSULTATS CARTOGRAPHIQUES



ArcticDEM (2 m)



AUTRES APPLICATIONS EN GÉOMORPHOLOGIE



--- Shorefast ice limits

--- Ice thickness profiles



CONCEPTUAL DESIGN, KINEMATIC ANALYSIS AND TRAJECTORY PLANNING OF A REDUNDANT COLLABORATIVE ROBOT

Ramin Ghaedrahmati, Étudiant(e) au doctorat

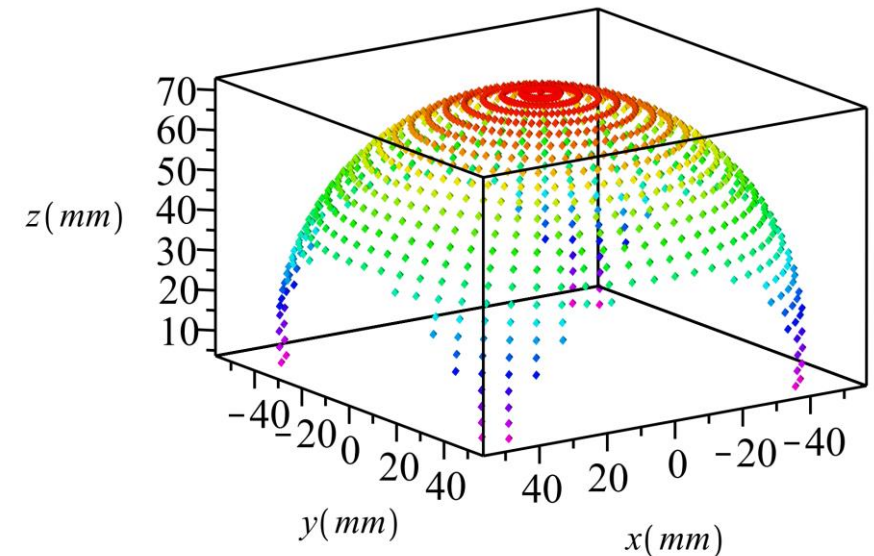
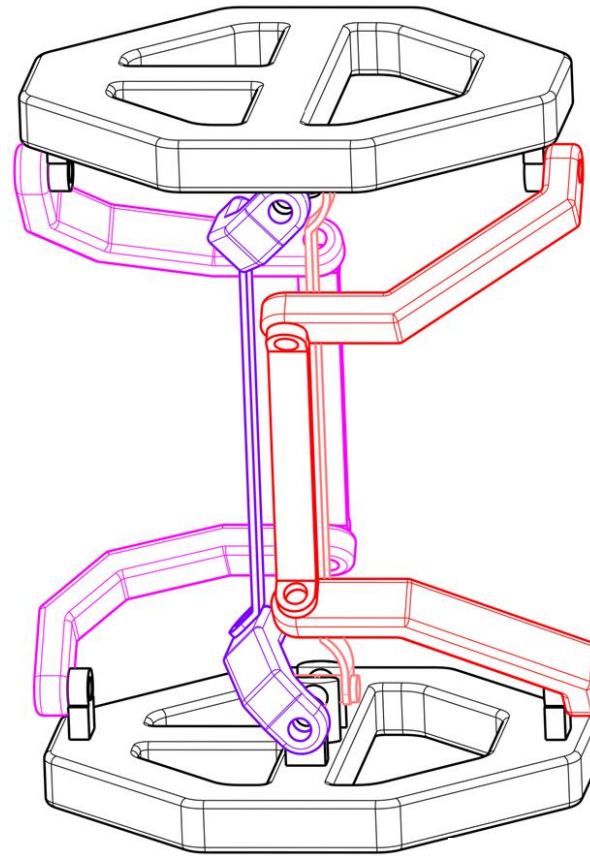
Sous la supervision de : Clement Gosselin

CONTEXTE ET MOTIVATION

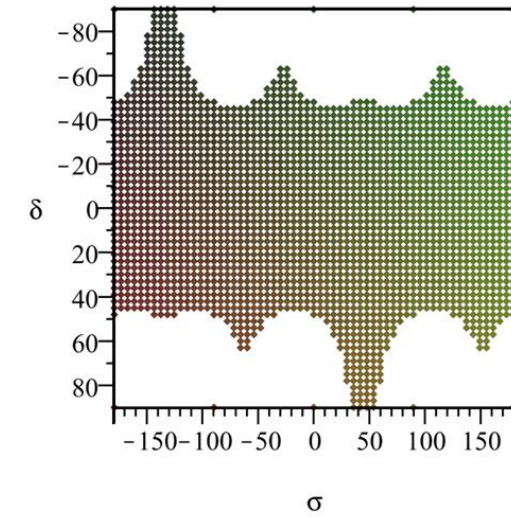
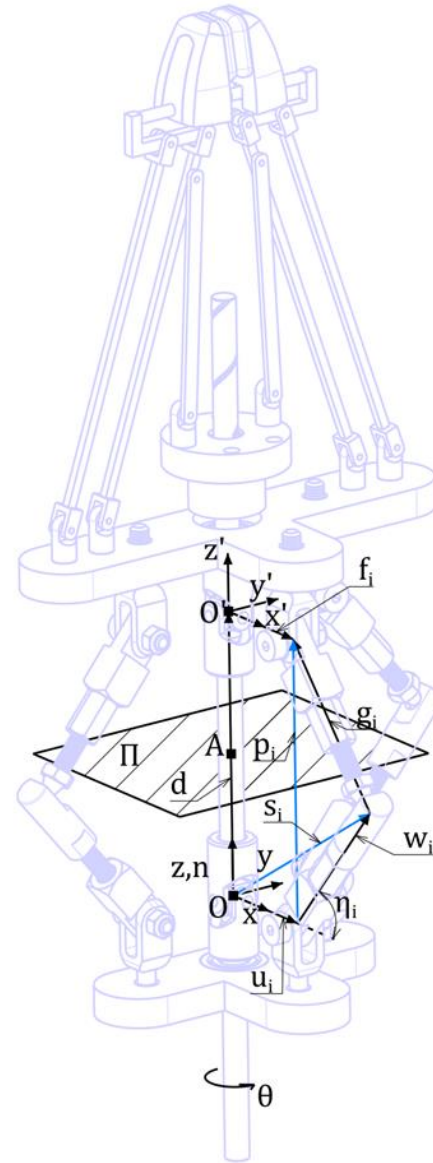
- Develop a concept of collaborative robot based on a base parallel robot on which extension links are mounted
- The mobility of the extension links is controlled using the base actuators of the parallel robot
- The links with which the user is interacting are very light (no actuators) and slender
- Safe and intuitive interaction.

2-DOF WRIST

- Stiff and fast with a compact light weight design
- Large and singularity-free workspace
- Achieve a tilt angle twice of an ordinary universal joint
- Cover almost a full hemisphere workspace without any contact interference between the links



DISCUSSIONS ET RÉSULTATS

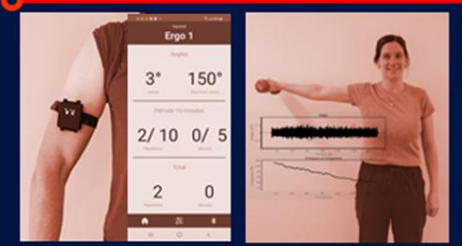


The Rotational Workspace of The Middle UU Leg $\alpha = 0.22$, $\beta = 0.75$ and $d = 212mm$

TRAVAUX AU LABORATOIRE D'INGÉNIERIE DE LA RÉADAPTATION

Alexandre Campeau-Lecours, professeur

AXES DE RECHERCHE



PRÉVENTION



ADAPTATION



INTERVENTION



ÉQUIPE



PROJETS

PRÉVENTION



ADAPTATION



INTERVENTION



QR codes for social media and website:



QUESTIONS POUR RÉTROSPECTIF #5