1SC2693 – Glacier monitoring

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Department: DOMINANTE - PHYSIQUE ET NANOTECHNOLOGIES
Language of instruction: FRANCAIS
Campus: CAMPUS DE PARIS - SACLAY
Workload (HEE): 40
On-site hours (HPE): 27,00

Description

The mapping of glaciers and the study of their change on a global scale are very useful for predicting changes in sea level, water resources in certain regions, mountain developments and for studying climate change and risks. natural associated. In this project, we propose to observe the dynamics of glaciers, through the observation of surface state changes, and the calculation of their speed of movement, by flux calculation and interferometry techniques.

Quarter number
ST2

Prerequisites (in terms of CS courses)
none

Syllabus
- Guided bibliographical research on glacier sites with particular recent dynamics (ice break, glacier surge)
- State of the art techniques dedicated to glacier analysis: estimation of snow cover, estimation of displacements by optical flow/interferometry, analysis of temporal evolution.
- application to real data sets and critical analysis of results

Grading
The session will be evaluated with an oral presentation.
Skills C4, C7 and C8 are evaluated during the oral defense.

Learning outcomes covered on the course
Applying the differential interferometry technique seen in progress on the city of Semarang.
Evaluate the sinking depth over the interval of available data estimate the sinking speed.

Propose a model to predict the level and the sinking speed for the next 10 years.

Description of the skills acquired at the end of the course

C4-1 Identify and reformulate the need
C4-2 Define and present one or more solutions
C7-1 Structure your ideas and arguments, be synthetic (assumptions, objectives, expected results, approach, and value created)
C7-2 Understand in an evolving way the needs and expectations of your interlocutors. Encourage interactions, be an educator, and create a climate of trust.
C7-4 Master spoken, written, and body language and master basic communication techniques