

SEMINAIRE CNRM

mercredi 14 octobre 2026 à 11h

FORCED CIRCULATION CHANGES EXPLAIN A SUBSTANTIAL FRACTION OF THE ANTHROPOGENIC WARMING IN HIGH MOUNTAIN ASIA

par Martin MENEGOZ (CNRS, IGE)

(Salle Noilhan ou CIC selon disponibilité de salle Noilhan)

Résumé:

High Mountain Asia has experienced pronounced warming over recent decades, with major implications for cryospheric and hydrological systems. After a general overview of the current IGE research focusing on Himalaya and Pamir massifs, this seminar will describe the drivers of the warming in High Mountain Asia using observational dataset and ensemble experiments from the IPSL-CM6-LR coupled climate model. Over 1963–2014, the seasonal warming rates in High Mountain Asia range between 0.19 and 0.28 °C·decade⁻¹. A dynamical adjustment method based on analogues is applied to disentangle thermodynamical and dynamical contributions to the warming. Unlike previous studies over mid-latitude regions, which attribute temperature-related dynamical trends mainly to internal variability, our results reveal a substantial forced dynamical contribution. In the IPSL-CM6-LR historical ensemble, this contribution accounts for approximately 34–46% of total seasonal warming. A similar contribution is found in the CRU observational dataset, reaching a significant contribution of ~40% in winter and spring. This dynamical warming is driven by anthropogenic greenhouse gases and it is expected to persist in future projections.