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PARALLEL SESSION C : IMPACTS AND APPLICATIONS
C3: REGIONAL SCALE HYDROCLIMATE: FROM OBSERVATIONS TO MODELLING TO APPLICATIONS

Observations and downscaling for alpine hydrological modelling

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Downscaling information from global and regional climate models is particularly challenging in mountainous regions, where surface elevation, slope and aspect have strong variations on scales much smaller than achievable model resolutions. Alpine catchments receive and produce disproportionate fractions of precipitation and streamflow, contributing to floods and water supplies for vast downstream areas that include at least half of humanity. Understanding the sensitivity of hydrological processes to climate change in high elevation catchments is therefore of paramount importance, but data for monitoring mountain hydrometeorology and improving models are scarce. The International Network for Alpine Research Catchment Hydrology (INARCH) is now facilitating collaboration between researchers working in well-instrumented mountain catchments to develop consistent datasets and to improve transferable models of alpine hydrology. This presentation will review dynamical and statistical downscaling methods being developed and used by INARCH researchers and upscaling of observations to improve model predictability.

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