

Modeling snow depth extremes in Austria

Harald Schellander

Zentralanstalt für Meteorologie und Geodynamik, Innsbruck, Austria

Maps of extreme snow depths are important for structural design and general risk assessment in mountainous countries like Austria. The smooth modeling approach is commonly accepted to provide more accurate margins than max-stable processes. In contrast, max-stable models allow for risk estimation due to explicitly available spatial extremal dependencies, in particular when anisotropy is accounted for. However, the difference in return levels is unclear, when modeled smoothly or with max-stable processes. This presentation will explore the suitability of the smooth modeling approach as well as different anisotropic max-stable processes to model snow depth return levels. In addition, spatial extremal dependencies of Austrian snow depths are presented in detail.