

## Mountain climate at the kilometer-scale grid spacing

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Mountains play a major role in shaping the weather and climate of the world but the current understanding of mountain climate and how it will change with further warming of the atmosphere is still very limited. The uncertainty is in large part related to the coarse grid spacing of current climate models (12-50 kilometers in regional and >50 kilometers in global climate models), which are not able to properly represent the complex mountainous orography and related processes. Thus, employing climate models with a kilometer-scale grid spacing provides a promising path.

In this talk, I will present results related to climate simulations performed with a km-scale horizontal grid spacing over the region of Europe (focus on the European Alps) and High Mountain Asia (HMA). The presentation will focus on the benefit and added value of using km-scale climate models in representing the present-day and future climate in mountainous areas.