

Downscaling approaches for climate model projections in complex terrain

From snow cover duration to meteorology

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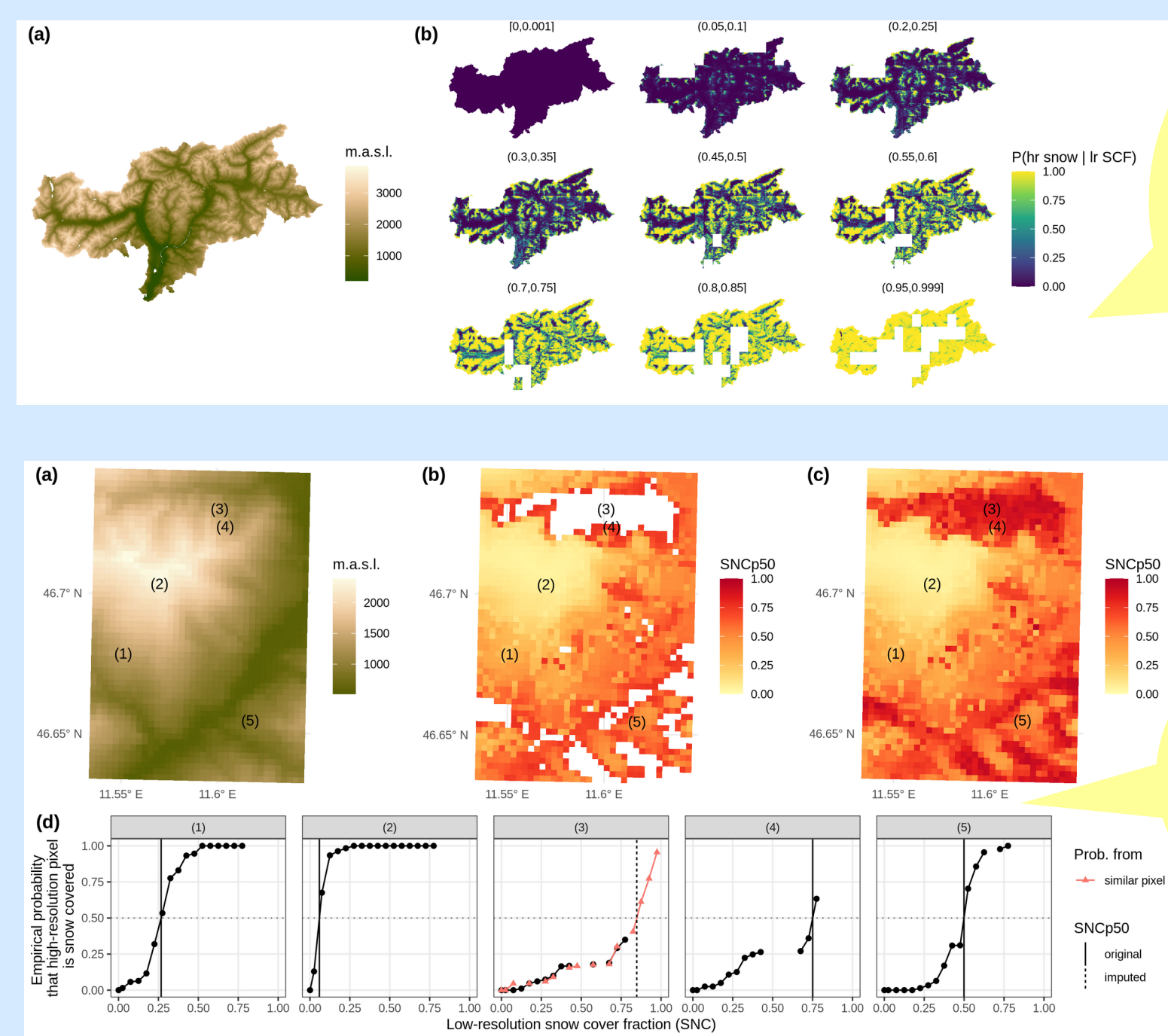
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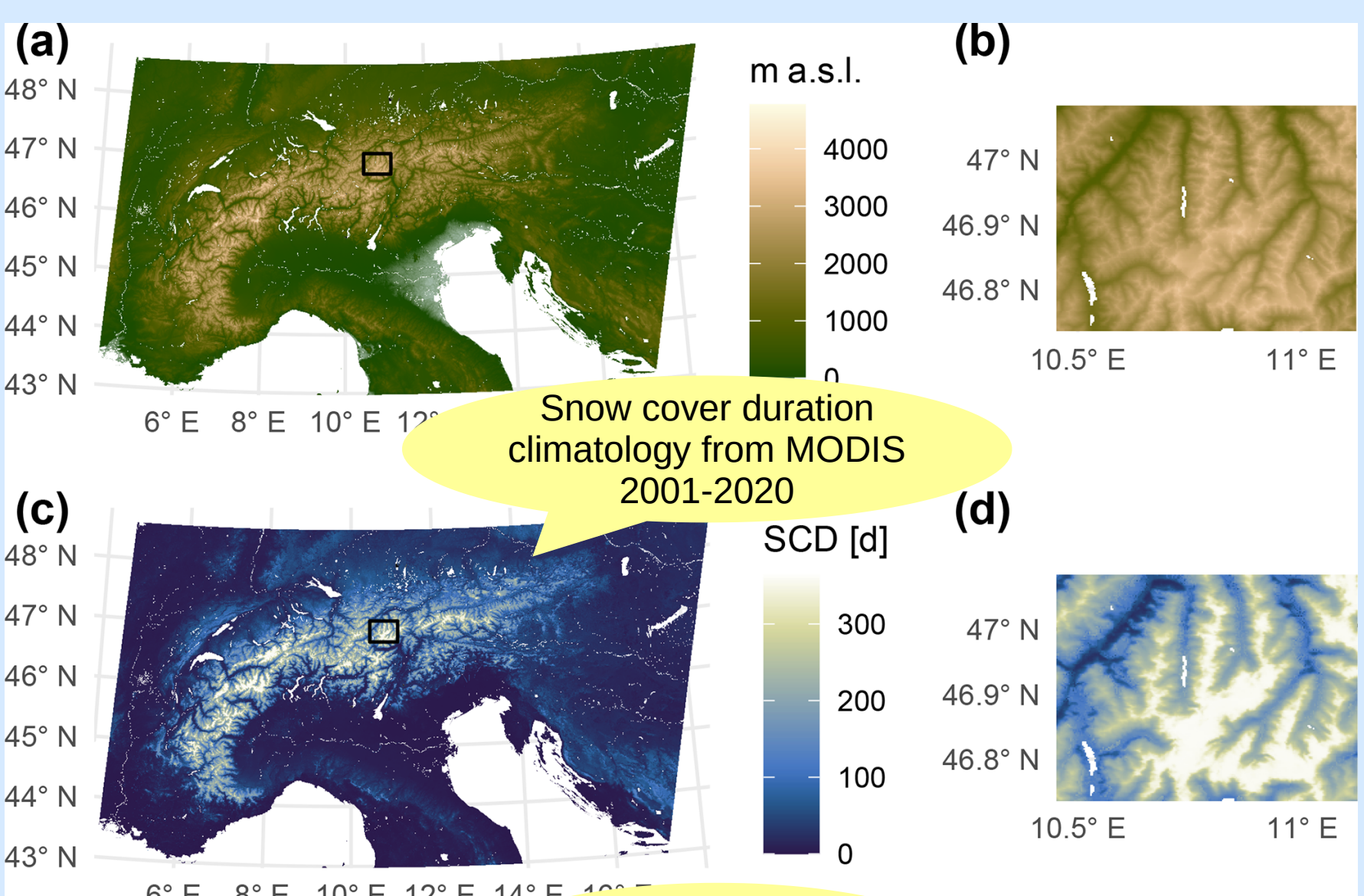
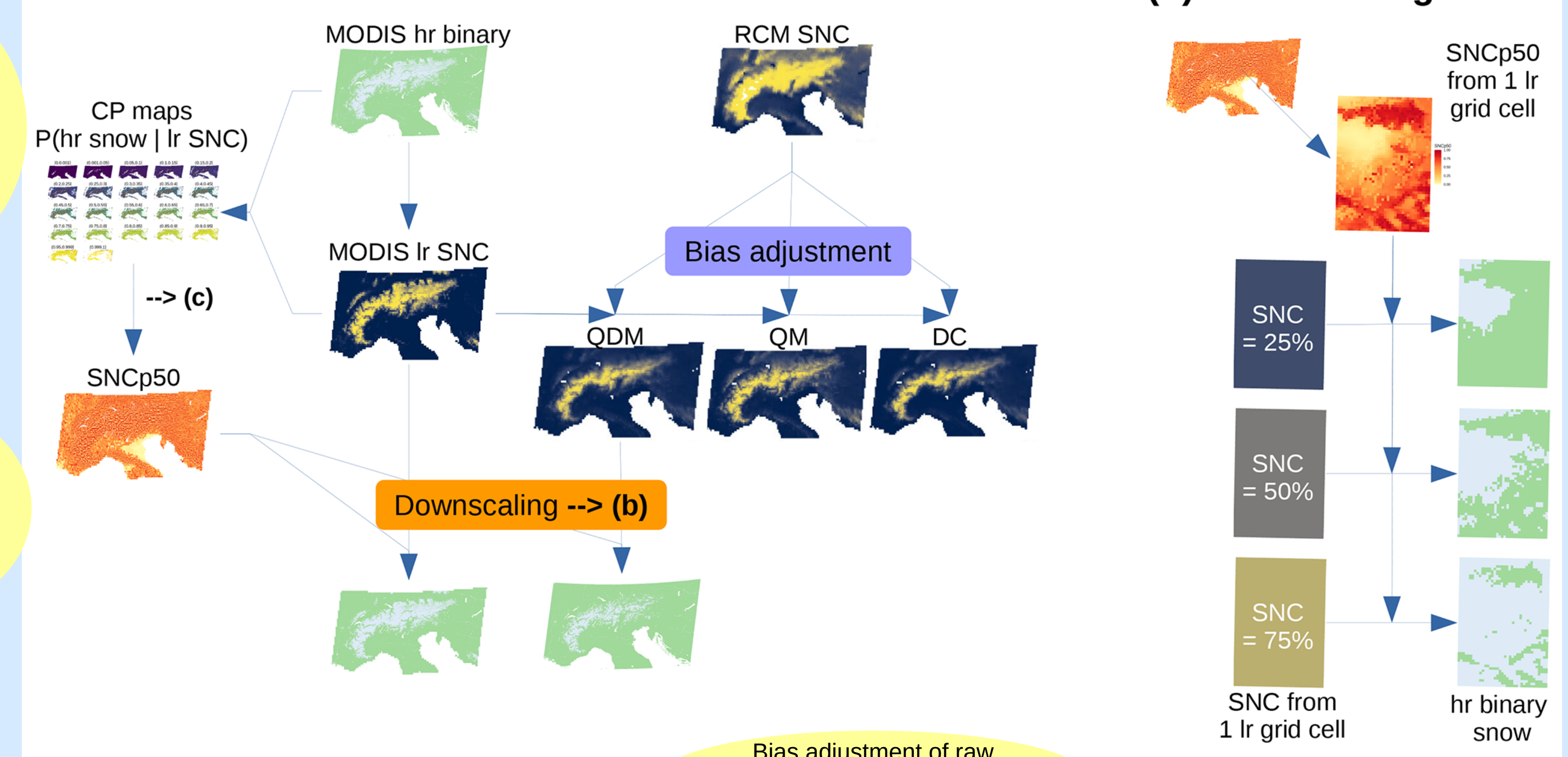
Empirical statistical downscaling of snow cover fraction from RCMs with MODIS

Pros:

- Fast
- Transferable
- Input data is openly and globally available
- Allows using ensembles of climate models and different GHG scenarios

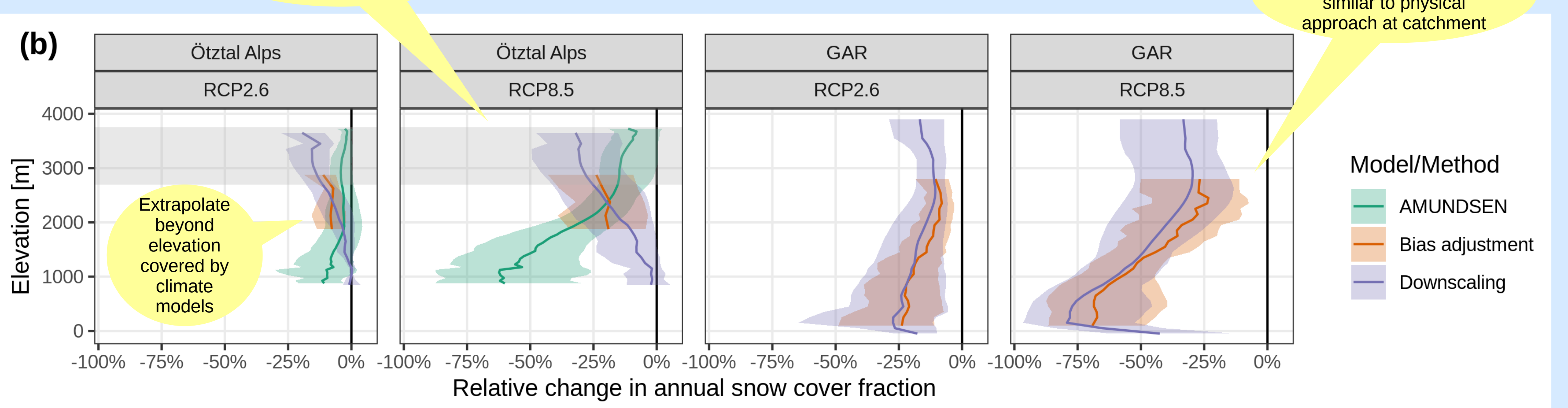
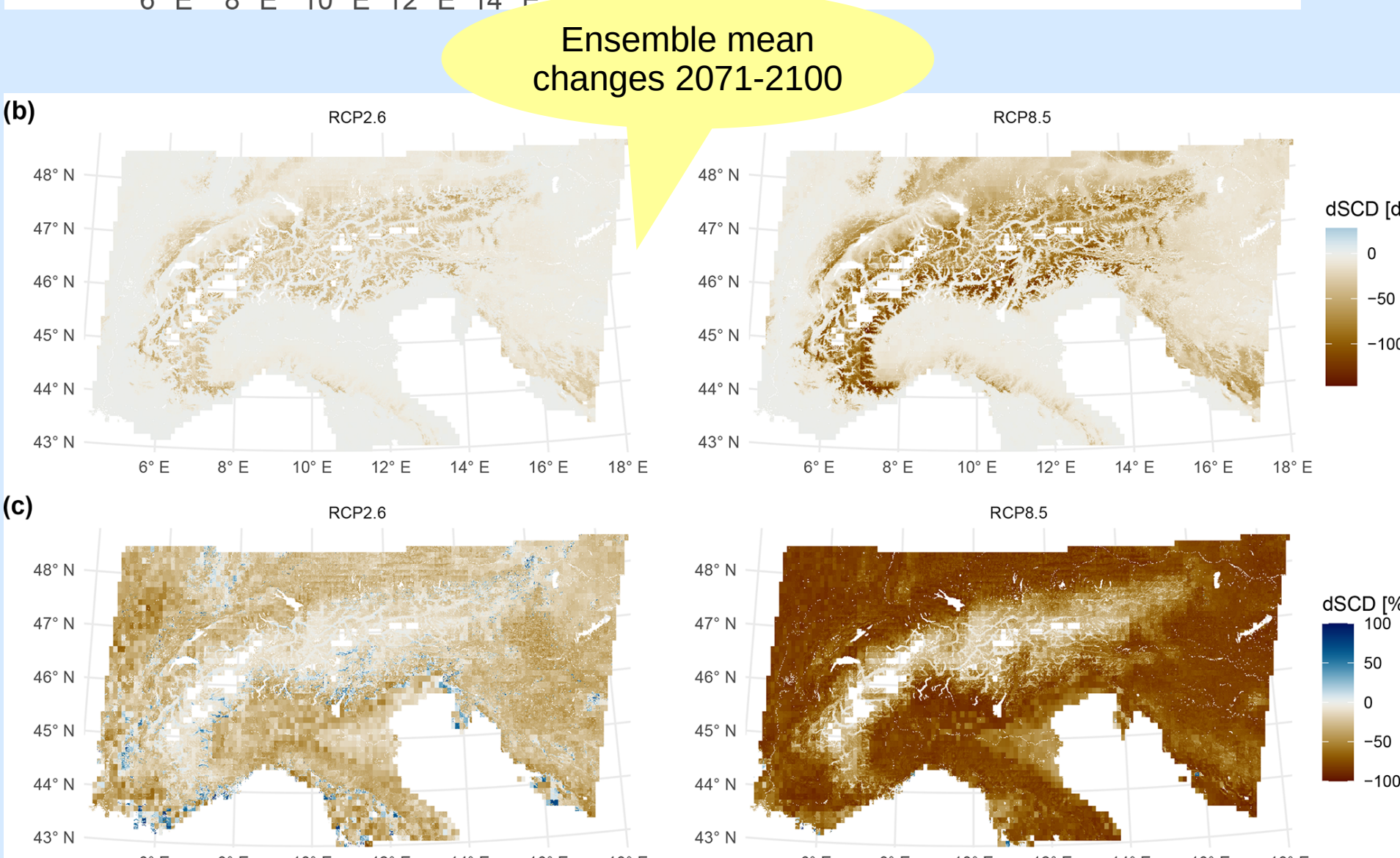
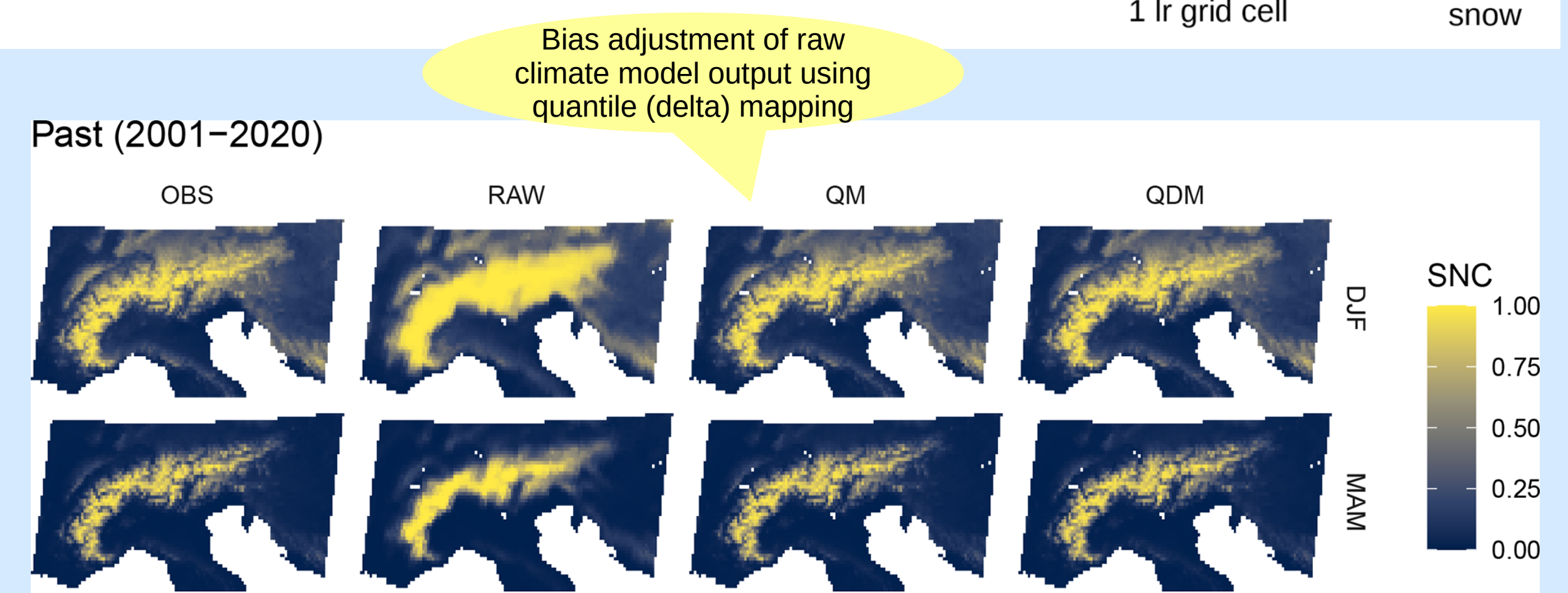


(a) Methods overview



Cons:

- Only snow cover fraction
- Inherits errors from observations
- Inherits deficiencies of climate models

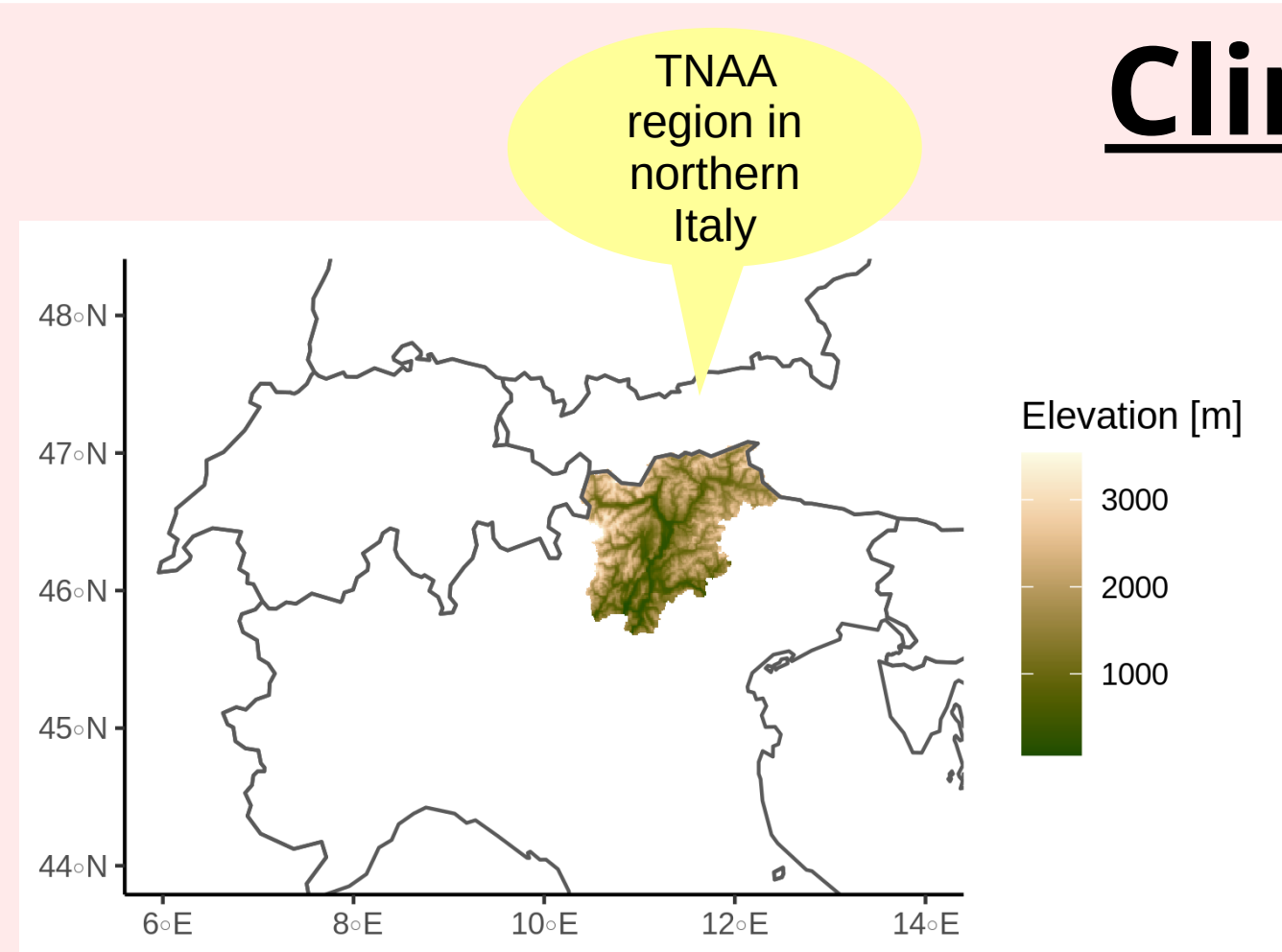


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Climate change scenarios for complex mountain terrain



Project

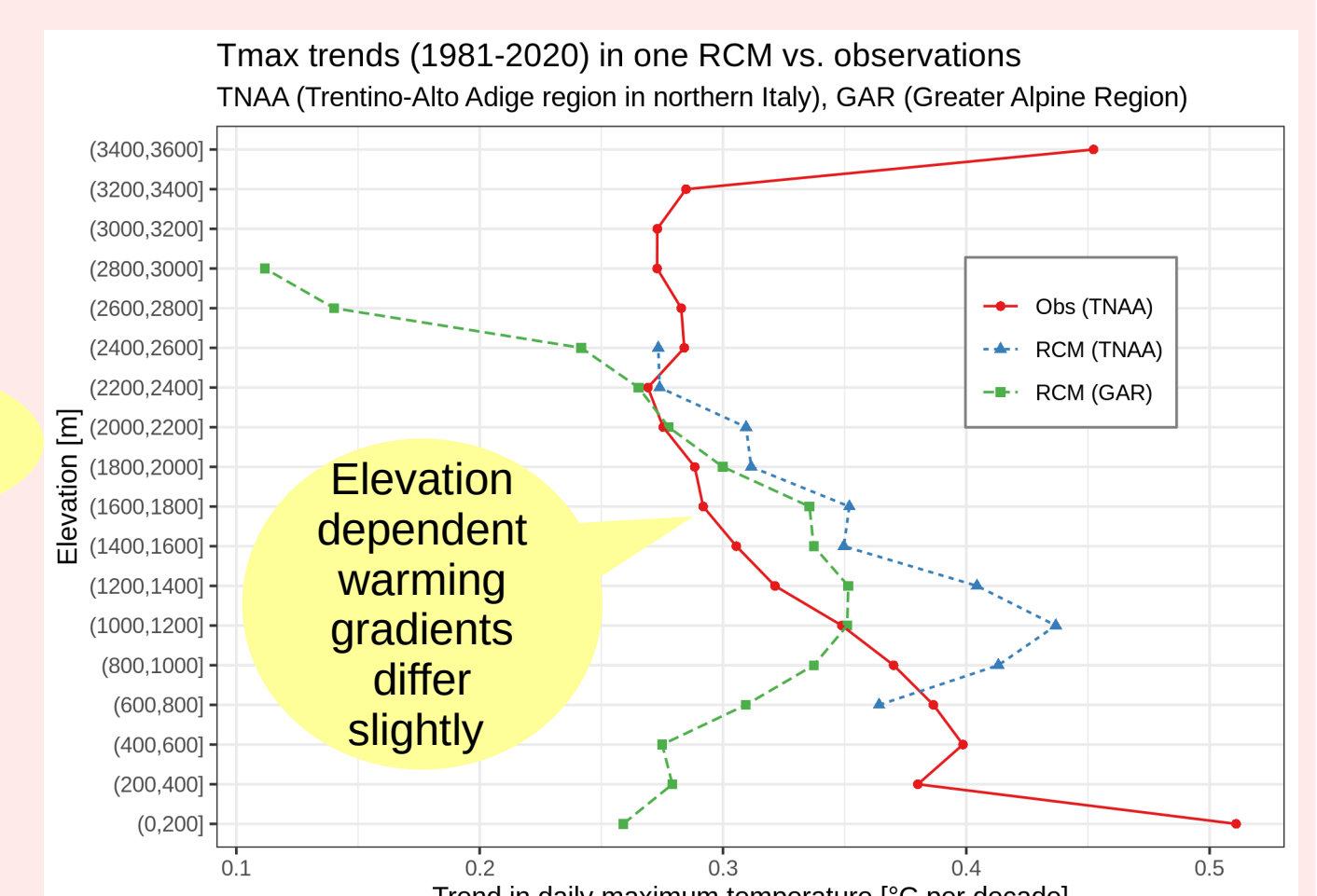
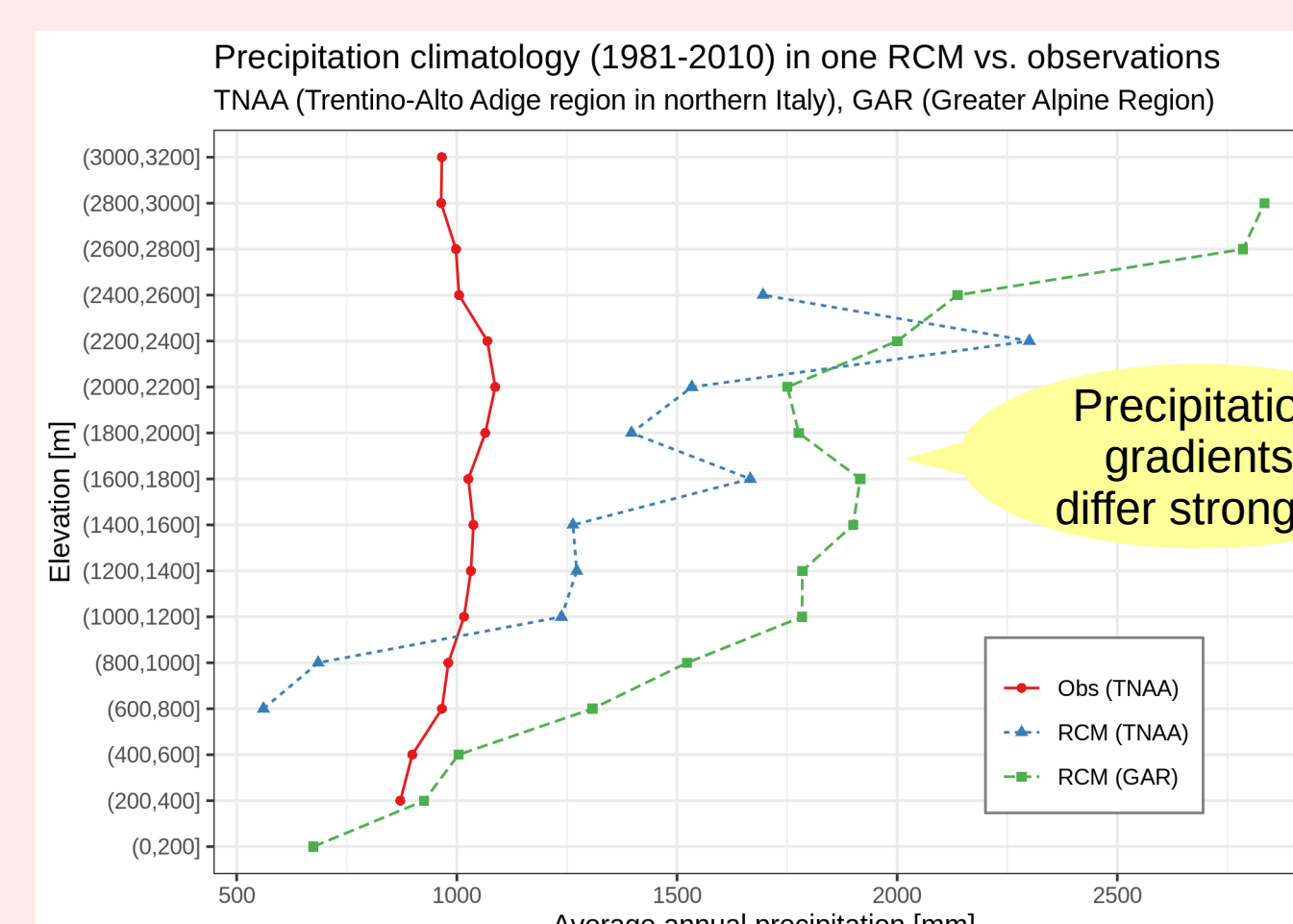
- Collaboration between governmental body and research institution
- Scientific support to the Strategy for Mitigation and Adaptation to Climate Changes of the Autonomous Province of Trento in Italy

Aims

- Overview of climate change impacts
- Provision of reference climate scenarios for climate change assessment and impact models

Scientific questions:

- How well do regional climate models represent meteorology and climate in complex terrain?
- When and how to perform bias adjustment and downscaling?
- What are the implications for climate change assessments?
- Implication for impact models, such as snow hydrology?



same overall range