



UNIVERSITY OF
SASKATCHEWAN

Global Institute for
Water Security

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GWF Pillar 1: Short-duration extreme precipitation in future climate

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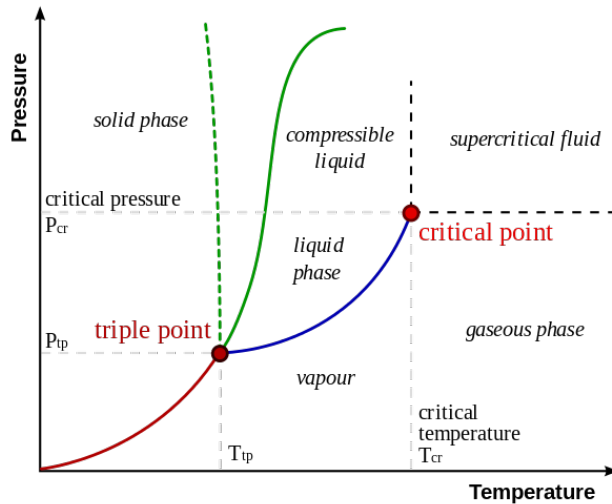
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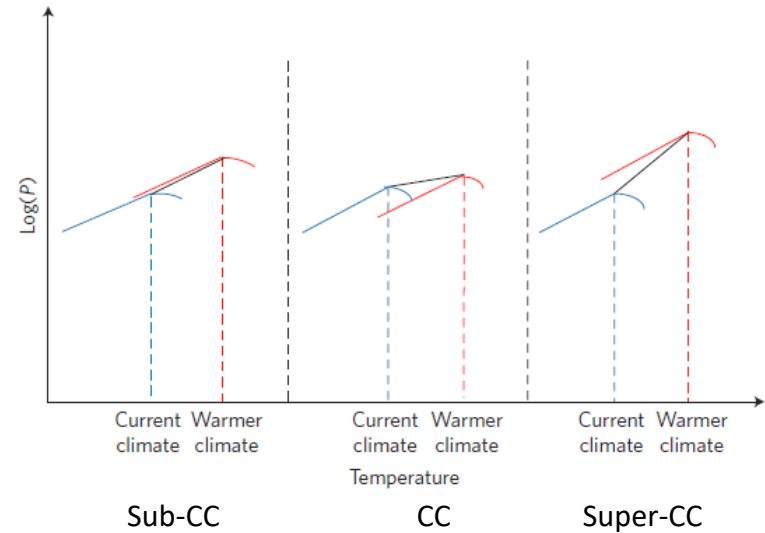
Short-duration extreme precipitation in future climate

What does the project address?

Clausius–Clapeyron (CC) relation



Zhang et al. (2017)

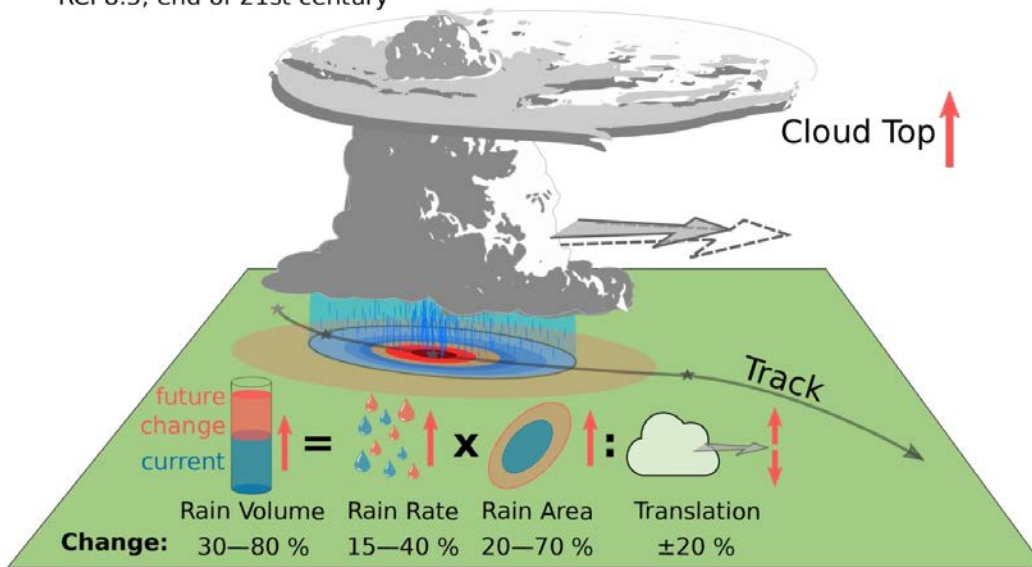


WP1: Whether temperature scaling works at convective-permitting resolutions for short-duration local precipitation extremes?

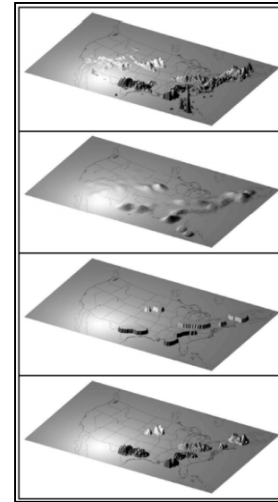
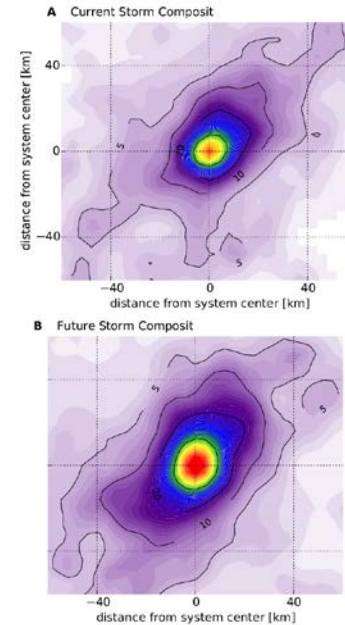
Short-duration extreme precipitation in future climate

What does the project address?

Changes in MCSs
 RCP8.5, end of 21st century



from Andreas Prein, NCAR

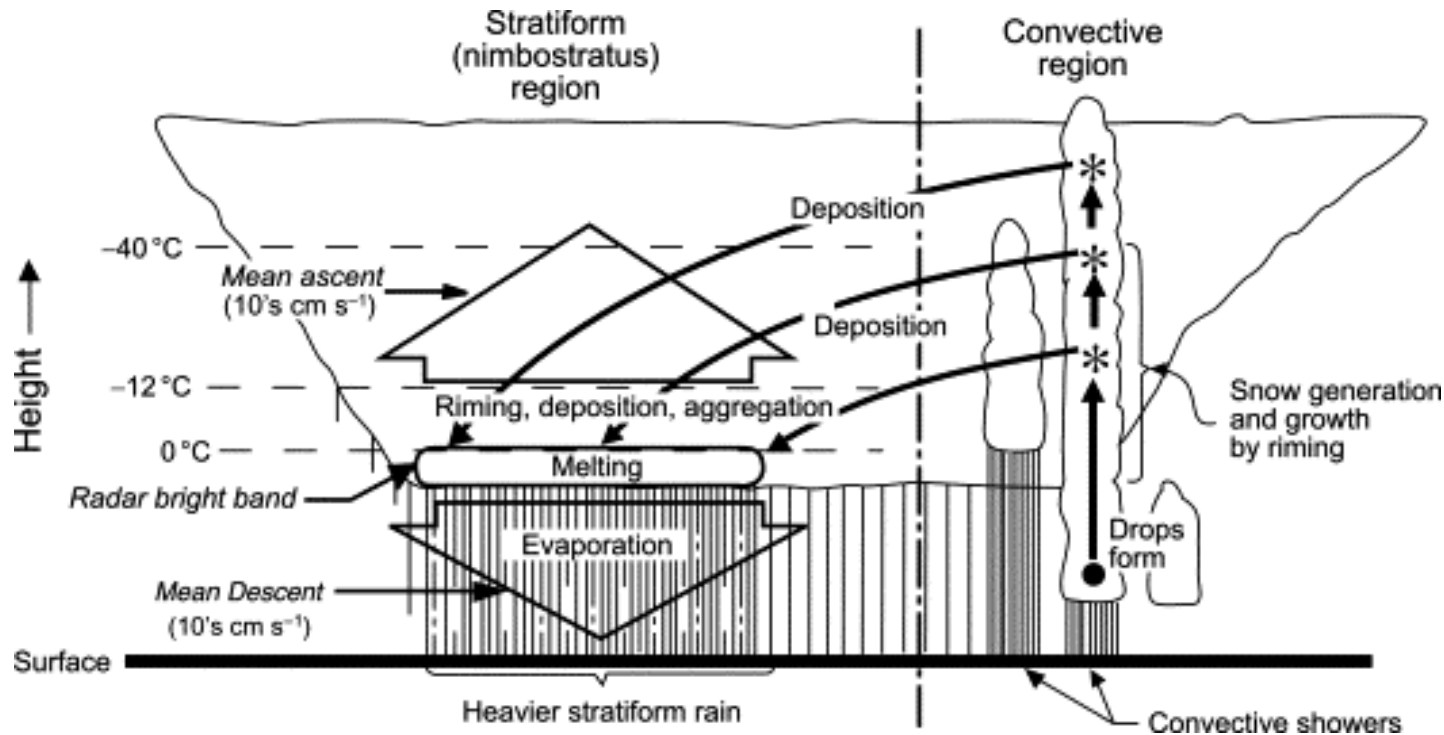


Method for Object-based Diagnostic Evaluation (MODE-TD)

WP2: How will the characteristics of mesoscale convective systems (MCSs) such as the precipitation intensity, size and life-span of storms change in the future?

Short-duration extreme precipitation in future climate

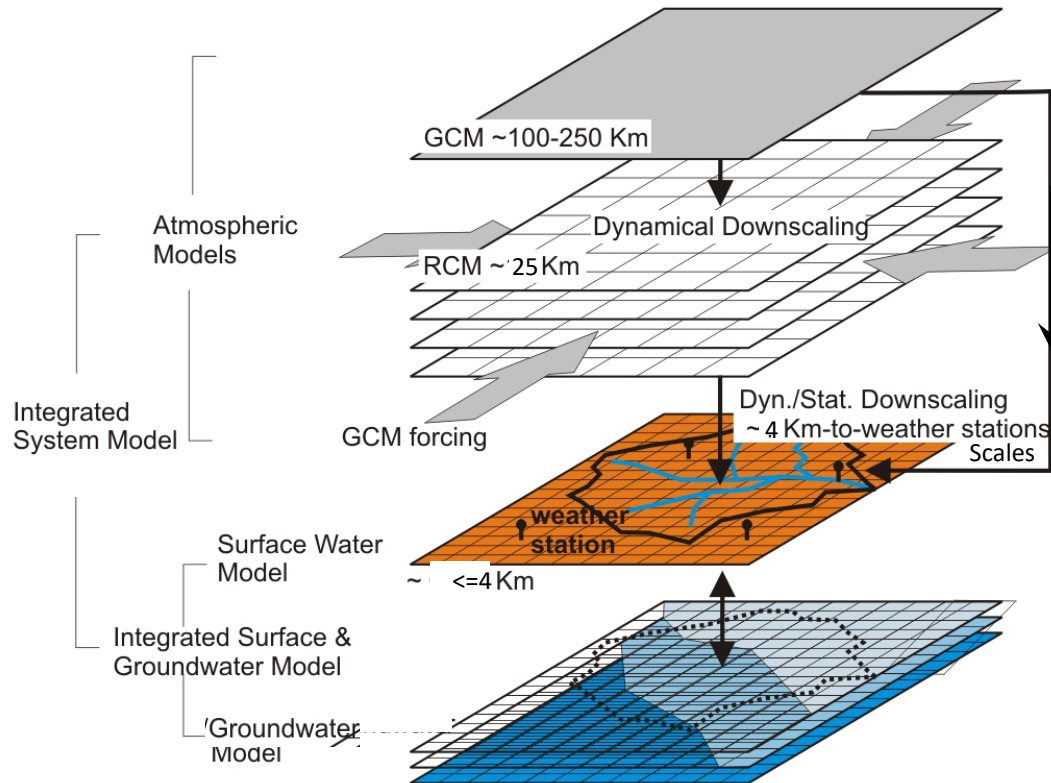
What does the project address?



WP3: What are the underlying physical processes for changes in MCSs and storm properties?

Short-duration extreme precipitation in future climate

What does the project address?

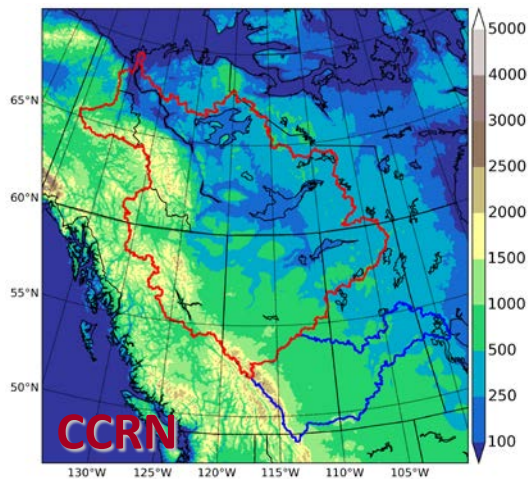


WP4: How do extreme precipitation features scale across resolution from GCMs to RCMs to convective permitting WRF?

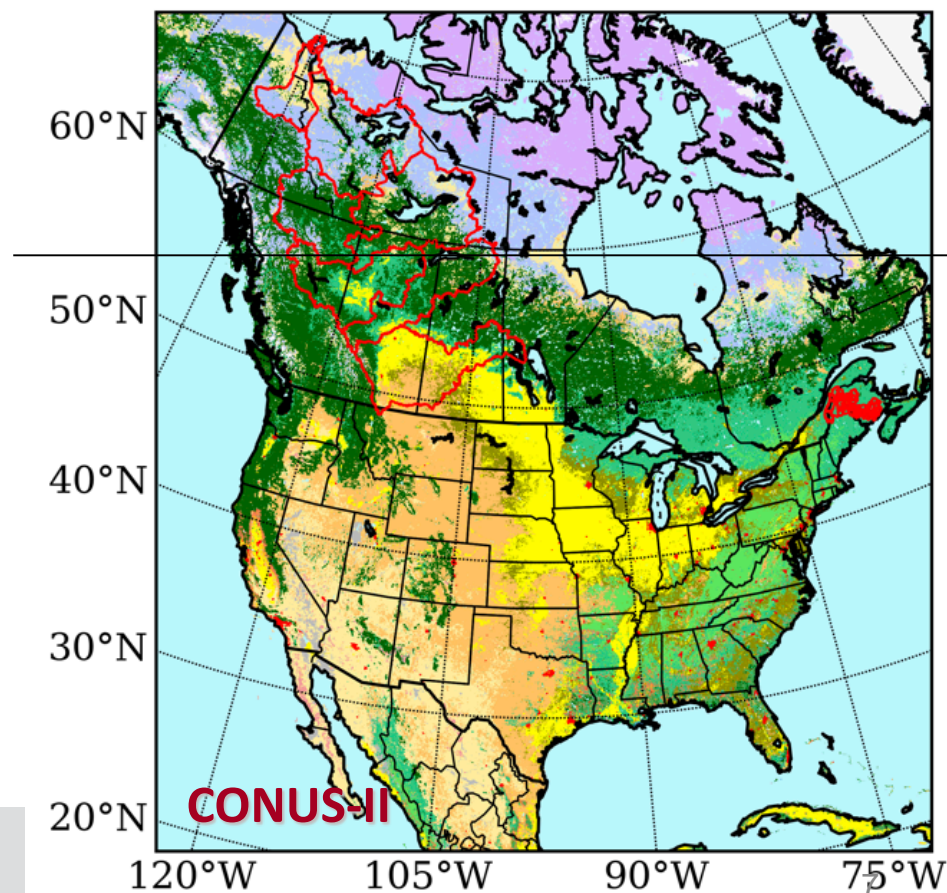
CONUS-II simulations for Global Water Future

Collaborating with Hydrometeorology group at National Center for Atmospheric Research (NCAR)

WRF Domain – CCRN + CONUS & Extended GWF



CONUS



- **The Goal:** a better understanding of the physical soundness of future precipitation projections by climate models, thereby providing a scientific foundation for the proper use of model projections that many GWF's users depend on.
- **Collaborations** with other projects and potential groupings
Pillar 3 EXTREME project, other GWF projects for the use of model projections
NCAR, ECCC
- **Core needs** and **contributions** to the core
Contribute to the core: Data Collection, Model output
Core needs: Data storage, Data access
- Reporting on key users and **KM plan**
KM will be coordinated with Pillar 3 EXTREME project and managed jointly.