

SPOOKIE phase II

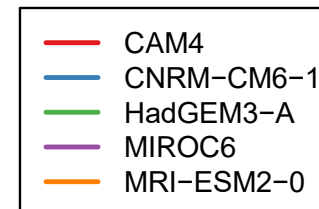
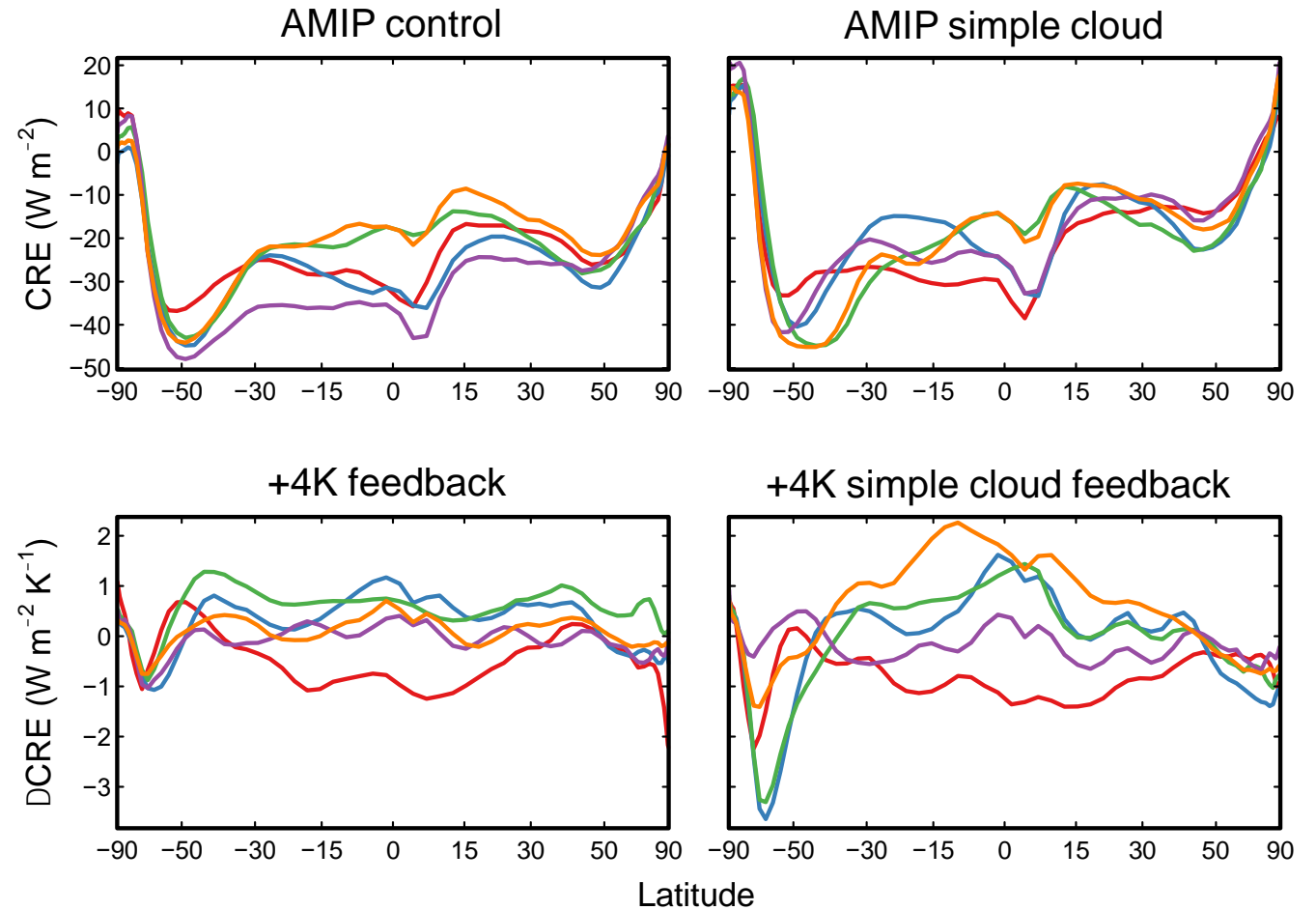
- Theme: **Understanding spread in cloud feedbacks by simplifying cloud schemes**
- Science question: How much do **differences in cloud schemes** contribute to inter-model spread in **cloud feedbacks** and **cloud adjustments**?
- Implement a **simple stratiform cloud scheme** seen only by the **radiation code**

Scheme and experiments:

- Cloud fraction $CF = f(RH) \leftarrow$ **tuning parameter**
- In-cloud liquid water content $q_{cl} = f(T)$
- No ice, but effective radius $r_{eff} = f(T)$
- All experiments run in AMIP/AMIP+4K mode
- Models currently participating: CESM, CNRM, HadGEM, MIROC, MRI

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- Preliminary results: +4K CRE feedback, AMIP control vs AMIP with simple cloud scheme
 - Reasonably realistic CRE distribution
 - Inter-model differences still visible in simple cloud scheme: role of microphysics and convection schemes
 - Spread in feedback is not reduced



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- Next step: analysis of **convection-off** experiments to understand interactions between parameterization schemes
- Please consider joining!
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