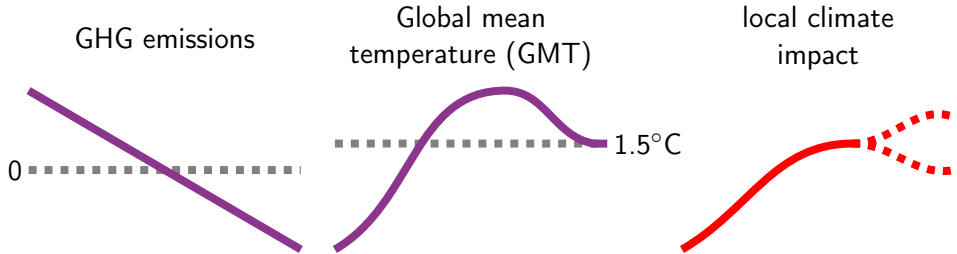
Additional climate impacts of overshoot scenarios

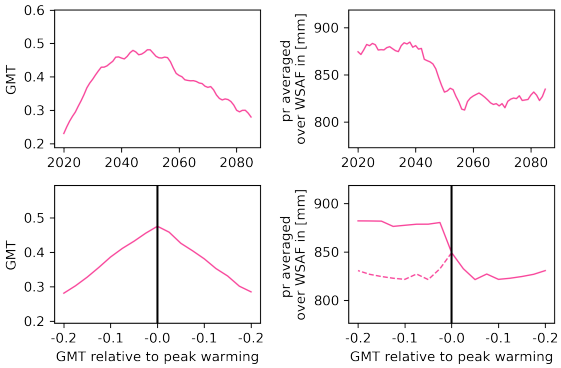
Peter Pfleiderer, Quentin Lejeune, Carl-Friedrich Schleussner, Jana Sillmann

Overshoot scenarios



- How do local climate impacts evolve after peak warming?

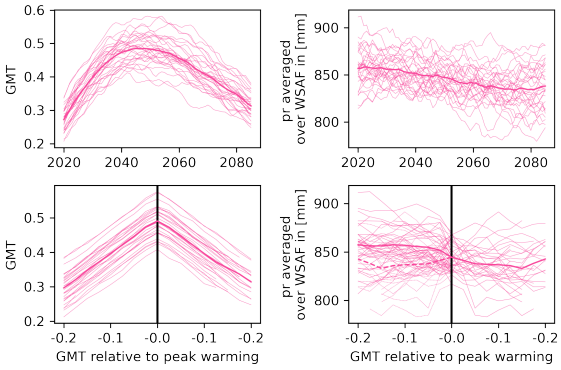
Looking at the overshoot



- SSP1-19 scenario
- MPI-ESM1-2-LR r1i1f1p1
- 30-year running average

▶ Local climate impacts do not scale with global mean temperatures

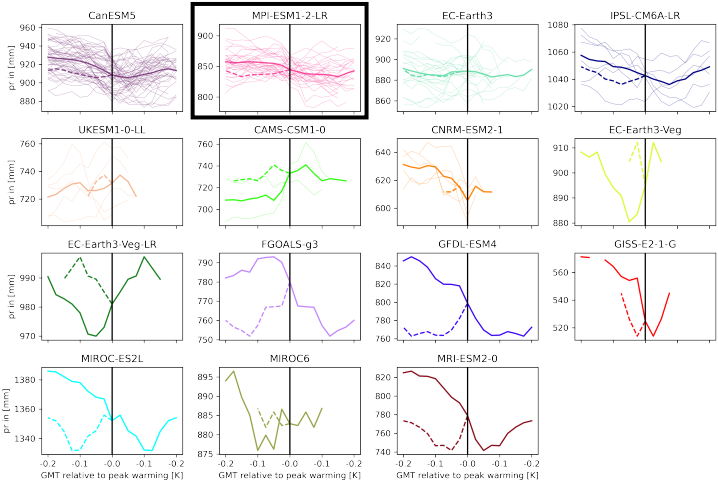
Looking at the overshoot



- SSP1-19 scenario
- MPI-ESM1-2-LR
- 30-year running average

- Local climate impacts do not scale with global mean temperatures
- The difference between before and after peak warming is robustly simulated by MPI-ESM1-2-LR

Precipitation in Western Southern Africa (CMIP6)



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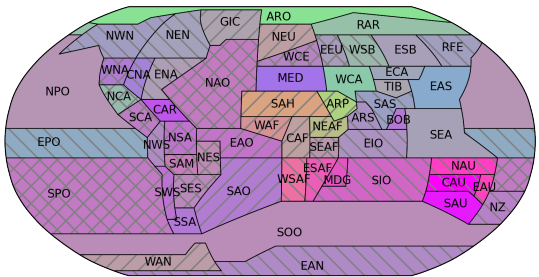
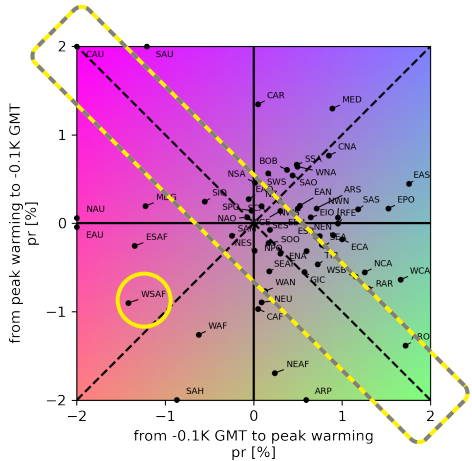
Asymmetric precipitation responses



model disagreement

before (-0.1K GMT) vs. peak warming

after (-0.1K GMT) vs. peak warming



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Summary

- A 1.5°C climate **after** peak warming will differ from a 1.5°C climate **before** peak warming
- There is considerable model disagreement in many regions
- The interpretation of models with only one run is challenging
- Next steps: present storylines for selected focus regions

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Summary

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Thank You!

@PePfleiderer

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