

## **Regional feedback patterns and regional climate predictability**

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There is a large spread in regional climate projections even for the same forcing scenario. Understanding the reasons for this spread and the degree to which further model development might reduce it are worthwhile goals. From a climate dynamics perspective this necessitates answering such questions as: how does uncertainty in one process contribute to uncertainty in the climate response? How well must the connections between processes be known to constrain the response? How does uncertainty in the processes in one region contribute to the uncertainty in the response of other regions? These questions are naturally addressed within the framework of a feedback analysis, which determines the total response to multiple interacting processes. I'll present a careful analysis of the spatial pattern of climate feedbacks within an aquaplanet simulation, and demonstrate that imposing those patterns within an energy balance model diffusing moist static energy can reveal much about both the local and nonlocal impacts of feedbacks.