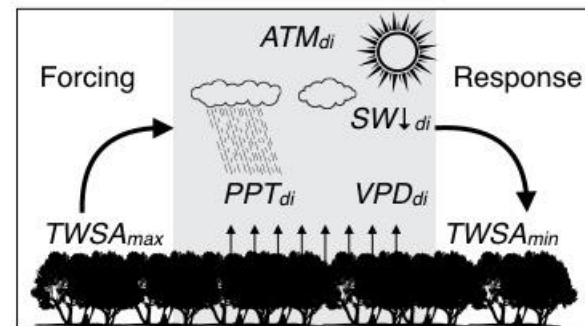


Do ESMs represent the strength of moisture feedbacks?

Objective: Use satellite observations to measure the strength of land-atmosphere moisture feedbacks for benchmarking ESMs



Approach: Derive new metrics of feedback strength from GRACE observations of terrestrial water storage anomalies (TWSA) and other atmospheric variables from AIRS, GPCP, and CERES

Results/Impacts: New metrics enable benchmarking of feedback strength in ESMs

- ESMs generally overestimate the feedback strength relative to satellite-derived metrics, particularly in middle- and low-latitude regions
- The response of the land surface to atmospheric conditions, which has received less attention in the literature, is important in both observations and ESMs

Levine, P. A., J. T. Randerson, S. C. Swenson, D. M. Lawrence (2016), Evaluating the strength of the land-atmosphere moisture feedback in Earth system models using satellite observations, *Hydrol. Earth Syst. Sci.*, 20:4837-4856, doi:[10.5194/hess-20-4837-2016](https://doi.org/10.5194/hess-20-4837-2016).

