

Model-adjusted Precipitation Influence on Dynamical Downscaling

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Abstract

Numerical models are expected to have realistic representations of the dynamics, and departures from the observed/analyzed fields can mostly be attributed to the parameterized physical processes that affect the model's large-scale response. Because the inversion of parameterized physical processes in numerical models cannot successfully be achieved, precipitation assimilation has been proposed as an alternative to overcome the hydrological unbalance between analysis and numerical prediction models. Here, a climate analysis of the coupled land-surface scheme's response to the model-adjusted precipitation is examined through the regional model's surface water budget terms. Because of the water vapor continuous adjustment during the model integration, changes in cloud distribution are expected. The surface radiation terms of the Global Energy and Water-cycle EXperiment (GEWEX) Surface Radiation Budget (SRB) datasets are then used to quantify these changes in a regional scale.