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## Evaluation of CMIP6 Model Precipitation Variability Through Compositing in Cloud-defined Weather States

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In order to understand the mechanisms determining precipitation variability and to evaluate model skill in simulating those mechanisms, it is important to partition the precipitation field into regimes that include distinct sets of processes. In the past, dynamic fields like omega and SLP have been used to define regimes and study cloud, radiation, and precipitation variability. More recently, cloud-defined weather states were derived and used for similar analyses. Here, we apply a new cloud-defined Weather State dataset derived from the higher-resolution ISCCP-H data to examine precipitation variability at global scales and evaluate CMIP6 model precipitation simulations. In addition, precipitation partitioning using mid-tropospheric vertical velocity is performed, and the differences between the results of the two compositing methodologies are discussed.