



Application of MET for the Verification of the NWP Cloud and Precipitation Products using A-Train Satellite Observations

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The goal of this study is to demonstrate the usefulness of the NCAR Model Evaluation Tools (MET) applied to the verification of NWP cloud and precipitation products using high-resolution A-Train satellite observations. MET has been developed to support the Developmental Testbed Center (DTC) at NCAR and has been integrated into community release of the Weather Research and Forecasting (WRF) system. The primary objective of MET is to provide users tools for forecast verification. MET provides grid-to-point, grid-to-grid, and advanced spatial verification techniques in one unified, modular toolkit that can be applied to a variety of spatial fields (e.g., comparison of NWP precipitation estimates with satellite observations). We are developing additional capabilities within MET to evaluate NWP precipitation and cloud products in the vertical along the path of A-Train satellite observations such as CloudSat and MODIS. These enhancements match fields from NWP products with satellite observations to provide diagnostic evaluation of attributes such as vertical structure of precipitation, cloud top height, and cloud base height. This goal of this type of analysis is to provide tools to help improve the capabilities of models to forecast representative cloud and precipitation features. The presentation will give a summary of MET and show results from several cases studies examining satellite observations with NWP products.