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CLIMATE MODELING BEST ESTIMATE DATASET (CMBE) - NEW ADDITIONS

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ABSTRACT

A recently introduced, new ARM product, the Climate Modeling Best Estimate (CMBE) dataset, is being augmented with the additional observational and model data. The CMBE dataset was created to serve the needs of climate model developers. The dataset was assembled from the highest quality ARM observational and value-added product (VAP) data relevant to climate model evaluation and diagnostics. The temporal resolution was chosen to be comparable with the climate model resolution of one hour. It is a multi-year dataset over the five primary ARM Climate Research Facility (ACRF) sites at the Southern Great Plains (SGP), North Slope of Alaska (NSA) and Tropical Western Pacific (TWP). The initial release of the CMBE dataset consisted of hourly averaged cloud fraction (narrow field-of-view and total sky), liquid water path, precipitable water, and surface radiation fluxes. We extended this set by adding soundings, surface precipitation, surface turbulent fluxes, surface meteorology fields, top-of-the-atmosphere radiative fluxes, and Numerical Weather Prediction (NWP) model analysis data. The initial, next generation release, includes the SGP site. Data from other sites will follow soon. We describe the algorithms used to derive the quantities not directly available from the VAPs and the extensive quality controls used. The data availability, product highlights and future CMBE product plans are presented. Statistical views of this data product are also presented.
