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STATUS OF THE BROADBAND HEATING RATE PROFILE (BBHRP) VAP

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ABSTRACT

The Broadband Heating Rate Profile (BBHRP) VAP is a collaborative effort of all ARM Working Groups to: a) extensively compare measured and calculated surface and TOA irradiances on two distinct spatial/temporal scales; and b) produce a dataset of computed heating rates profiles for use by the Cloud Parameterization and Modeling Working Group for diagnostic purposes and to drive climate models. The objective of this project is the critical evaluation of radiation measurements, radiative transfer models, and the specification of the relevant atmospheric properties, with a key focus on clouds. This poster will describe the current status of the project, including the availability of BBHRP results and data, and present analysis of the results of the current and previous versions. BBHRP now extensively utilizes atmospheric profiles provided by the Mergedsounding VAP, which allows the consideration of cases other than those at sonde launch times. This is essential for the development of BBHRP at NSA due to the scarcity of sonde launches, but also has opened further opportunities for analysis at SGP. This poster will present the results of two SGP BBHRP runs of this type, one at satellite overpass times and one at the times of in situ Aerosol Profile (IAP) flights. Radiative closure results from various cloud property retrieval techniques with the inclusion of aerosol properties specified by the Aerosol Best Estimate VAP will also be shown. Aditionally, the poster will discuss the first stage of the Continuous Intercomparison of Radiation Codes (CIRC) project and future plans for development of the BBHRP VAP.