



Evaluation OF AMSU-B rainrates against TMI/SSMI/AMSR-E estimates using TRMM PR and ground measurements as references

X. Lin (1) and A.Y. Hou ()

(1) Global Modeling and Assimilation Office, NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA, (2) Global Modeling and Assimilation Office, NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA

To assess the quality of rainfall estimations from cross-track microwave sounders relative to those from conically-scanning microwave radiometers, rain-rate retrievals from 8 passive microwave sensors including TMI from TRMM, SSM/I from DMSP F13, F14, and F15, AMSR-E from AQUA, and AMSU-B from NOAA-15, -16, and 17 have been compared against TRMM PR over land and ocean and also against ground-based measurements over the US continent.

Results show that for instantaneous rain rates between 1 and 10 mm/h, AMSU-B rainfall estimates are comparable in quality to those derived from conical-scanning radiometers over land, even though they are somewhat worse over oceans. These results suggest that cross-track microwave sounders with high-frequency channels on operational satellites such as the National Polar-orbiting Operational Environmental Satellite System (NPOESS), NPOESS Preparatory Project (NPP), NOAA-N', and MetOp satellites can play a significant role in augmenting conically-scanning microwave radiometers to achieve better sampling and coverage over land.