



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

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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.