

Interactive comment on “Cloud-type dependencies of MODIS and AMSR-E liquid water path differences” by M. de la Torre Juárez et al.

Anonymous Referee #2

Received and published: 24 March 2009

This paper uses AMSR and MODIS data to study differences in LWP estimates between the two instruments. There have been various other papers lately with the same general research direction, most of them cited by the authors (Horvath, Benartz, Greenwald, and others).

This paper uses auxiliary information, such as cloud top pressure or cloud top temperature, to stratify differences in microwave and near-infrared LWP estimates. While this is a new approach in a sense, I do not believe it provides much new insight into the problem. Particular retrieval issues associated with the two sensors are only mentioned briefly or not discussed at all. There are various assumptions made in the two retrievals that be investigated to help understand biases, such as: Three-dimensional radiative transfer, cloud screening, partitioning in rain and liquid, mis-alignments of the

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sensors, aerosols, and others. Instead of trying to gain insight into which processes cause the differences, the authors merely discuss them.

In addition there are some other disturbing shortcomings in this paper. For example, some of the histograms show a significant amount of liquid clouds down to 190 K cloud top temperature and down to pressure levels well below 250 hPa. Are those really liquid clouds? Also, the authors state that AMSR data is averaged over 0.25x0.25 degree, which is one of the level 3 gridded products offered by Wentz/RSS. Then, they claim this to be the Field of View of AMSR, which is simply wrong. A more thorough analysis would have used AMSR level 2 data instead of level 3 and explicitly accounted for the actual field of view of AMSR.

In summary I do not think this paper provides much insight and I recommend this paper to be rejected.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 3367, 2009.

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