

The paper on improving attenuation estimates by microwave radiometry is clearly written, of scientific significance, and will be a useful addition to the radio propagation literature. I do have a few comments that should be considered by the authors before publication.

#### COMMENTS

1. Although the authors clearly state that the importance of accurate  $T_{mr}$  depends on lower elevation angles, it is not clear to this reviewer if the analysis only uses  $T_{mr}$  at zenith. If so, please state explicitly what range of angles was used. It could be an interesting study of the dependence of the accuracy on elevation.
2. It was also not clear, what range of cloud liquid was encountered during both the preparation and validation portion of the paper. Since the attenuation at V/W will be much more sensitive to cloud liquid than K band, perhaps some comments could be made on this point. Again, the dependence of  $T_{mr}$  errors on attenuation during cloudy conditions might be another useful study. The two channels at 51.26 and 52.26 GHz could prove useful in this situation.

#### GRAMMATICAL COMMENTS

1. P2,L51. Suggest replacing "band" by "bands".
2. Many pages, after defining PTU as pressure, temperature, and humidity, don't need to repeat. Also, for the first time, make it clear that relative humidity is used as the humidity variable.
3. P5,L 55. Please insert "a half data set".
4. P10, L19. Suggest "bring significant improvements" by deleting "to".