Review of:

Quality Assurance Guidance for the Collection of Meteorological Data Using Passive Radiometers, FINAL DRAFT 040711

Overall Comments and Questions:

- What about the interpretation algorithm (kernel?). Could they inherently limit the lapse rate, or the amount of inflection? How many degrees of freedom are there in a profile? Is there any way of assessing this from the manufacturers description, or from the data? If there are limits, how do they compare to the measured and reported vertical interval? Data more dense than any limit need to be appropriately flagged, or data set reports need to include the limit information.

-pg 6, I'm not clear on "operational comparability" and why this concept should be used instead of accuracy and precision

-For multiple inflections points, is aliasing a concern?

Specific Comments:

Pg 6, 2nd paragraph, 6th sentence: "The calculation of comparability also…" This is a long sentence and is difficult to understand. Please divided or simplify.

Pg 6, bottom. To what is the index "i" referring? A height index, or an index of a full profile? Please clarify.

Pg 7, 3rd paragraph, 3rd sentence: "…data from the radiosondes are volume averaged…" I don't think a radiosonde can represent a volume. I think an altitude average would be more accurate of a description, unless there's some horizontal wind component across the sonde that is being assumed or calculated, but I don't see what the point of that would be, anyway?

Pg 9, last paragraph. This is saying that 90% completeness when environmental factors allow should be a goal? Can this just be stated directly?

Pg 11, Representative location: Since we know the radiometer is sensitive to a cone with a finite distance, can't we say that the terrain at least XXX meters(or km?) away should be similar to the site? I'd think a km would be a minimum…

Pg 12, Should there be a mention here of avoiding power lines for physical blocking, high voltage for RF, and any other objects (trees, buildings, hills, etc) for physical blocking?

Pg 19, 2nd paragraph, 6th sentence: “ The data collected from each sonde should be volume …” Sonde’s aren’t measuring the temperature of a volume, only a line. Wouldn’t it be more accurate say the sonde should be averaged in the altitude range that corresponds to the radiometer’s averaging volumes?

Pg 20, Section 6.3, first bullet: “Installation, setup, and checkout” Isn’t what you just described in the previous sections? I don’t see why this would be a part of an SOP, unless moving and setting up the radiometer is part of routine activities? You only need say that upon startup, x,y, and z QA steps should be taken.

Pg 21, I have found that having a dedicated log book for any field instrument, that always stays with the instrument, is crucial to tracking it’s behavior. In case it wasn’t mentioned somewhere else (and I overlooked it) I’d say it should be added here, perhaps as a bullet of the QAPP details. The logbook would be a place to record a number of the items in the operational checklist. Ah, I see some language about on site logs after this. I’d suggest having the log be an explicit bullet at the begging of the list. And, that the log is dedicated to the instrument. Sometimes “Site” logs can get moved with other instruments, taken offsite for transferring data. Inevitably, they can get lost, or be away from the instrument when crucial information needs to be recorded.

Pg 23, last paragraph, the first sentence is long and awkward. “A rapid, …” I think the second comma is in the wrong place. Please split this sentence and/or simplify.