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Biogeosciences Discussions



# *Interactive comment on* "Sensible and latent heat flux from radiometric surface temperatures at the regional scale: methodology and validation" *by* F. Miglietta et al.

**Anonymous Referee #3**

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This is a well written paper that compares methods to assess surface sensible and latent heat fluxes. It brings together ground measurements, airborne and satellite remote sensing observations. How to best scale observations from local to regional scale and the associated information gain (or loss) is still an open issue and the paper is thus timely and well-suited for BG.

I only have a number of fairly minor comments that should be addressed:

There is a fairly substantial discrepancy between the ratios of sum of sensible and latent heat flux over Rn between surface and airborne measurements. The authors mention possible reasons for this, i.e., the flux loss in the low and high frequency



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domain, and the necessary correction for flux divergence. I was wondering whether it was possible to dwell upon this in a bit more detail, which of those processes may be the dominating culprit, how sensitive is the flux correction, for instance, for the chosen value of K, etc.

It may sound like semantics, but I do not particularly like "validating" models. I don't think this is the proper term to be using, particularly considering the large discrepancies between some surface and airborne/satellite-derived fluxes. Models can be evaluated.

In equation (6), how is soil heat flux derived?

Similar to the other reviewer I got also a bit worried about the bold statement of using "literature" values for rc. Before accepting this at face value I would like to see more discussion about the sensitivity of the overall results to varying values of rc.

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Interactive comment on Biogeosciences Discuss., 6, 1945, 2009.