

## ***Interactive comment on “Evaporation from Savanna and Agriculture in Semi-Arid West Africa” by Natalie C. Ceperley et al.***

### **Anonymous Referee #1**

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Summary: This paper studied evaporation and more broadly the surface energy budgets at two sites of different land cover types (Savanna v.s. Agriculture field) in semi-arid West Africa. Observations spanning from May 2009 to September 2010 were used. Characteristics and the controlling variables of evaporation were identified, which is important for such an area lacking of experimental data. The comparison between results over two land cover types is also an interesting contribution to the literature. I also like the connection to the social and culture aspects. Overall the paper is well written and presented. I only have one major comment and some minor comments and thus recommend minor revision.

Major comments:

1, I find the calculation of net radiation for all the meteorological stations does not really

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contribute to the paper. If I understand correctly, the measured net radiation is not really used except in validation against the measured ones at the energy balance stations. It is interesting as a stand-alone piece but is not well integrated into this paper. And I find removing this does not change the paper significantly or even make the paper more focused. One supporting evidence for my argument is that none of the related calculations was even mentioned in the abstract and conclusions.

Another reason I think this should be removed is that the calculations were not studied deeply. For example, I think the explanation of biases in the calculated net radiation is not thorough. The biases in the net longwave radiation in Figure 3 are so large that I don't think it is due to the wavelength of the instrument.

Give these two reasons, I would strong suggest remove this part.

Minor comments:

1, line 23, page 8: I would not use consistent. Maybe 'smooth'.

2, line 22-25, page 9: This should go to a place much earlier when the radiative and flux measurements are first discussed (for example in Figure 4).

3, Figure 7 does not reveal much new information and should be removed. On the other hand, the discussion of Figure 8 is rather superficial at this moment. I only see 1 sentence for Figure 8 (line 20, page 9).

4, Figure 10 (section 3.3.1): R2 should be provided in order to claim “NDVI and soil moisture have the strongest positive correlation with evaporative fraction”.

5, Figure 11 has too much non-essential and redundant information. The only helpful information is the middle panel showing the validation of the model. The others can be safely removed. On the other hand, Figure 12 can be combined with the middle panels of Figure 11. By the way, figure 12 is not even mentioned.

6, line 9, page 11: should be figure 9, not figure 8.

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