

Interactive comment on “Coupling carbon allocation with leaf and root phenology predicts tree-grass partitioning along a savanna rainfall gradient” by V. Haverd et al.

B. Amiro (Editor)

Brian.Amiro@umanitoba.ca

Received and published: 10 December 2015

Special Issue Co-Editor comments on Haverd et al. “Coupling carbon allocation. . .”
Biogeosciences Special Issue on OzFlux.

Special Issue Co-Editor: Brian Amiro, University of Manitoba, Winnipeg, Canada.

General Comments and Recommendation

This manuscript describes implementation of a new model to describe water and carbon dynamics along a gradient in Australia. It is well-written and easy to follow and makes an original contribution to the literature. It uses flux measurements from several

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sites and hence fits into the overall goal of the special issue on OzFlux. I recommend that it be accepted with changes, providing that the authors can satisfactorily respond to the comments from the two Anonymous Referees plus the specific comments from the Special Issue Co-editor, below.

Specific Comments:

Pg 16317, lines 3 and 4. The term “resource uptake surfaces” is not clear; I understand this as a modelling term, not something that species respond to.

Pg 16317, line 8. Repetitive to say “stored” then in “storage”.

Pg 16318, lines 3 and 4. Define ESM as Earth Systems Model?

Pg 16318, line 8. Normally we would have Haverd et al 2013a cited before Haverd et al. 2013b.

Pg 16324, line 5. Remove “a” after “proportion”.

Pg 16327, Equations 26 and 27. I am having a hard time reconciling units in these two equations. It seems that the second term will have the same units in both equations, but the primary terms have saturation deficit and temperature, respectively?

Pg 16329, line 14. Haverd et al 2012 is not in the reference list.

Pg. 16331, line 20. I think that the Isaac reference will likely get published much behind the current paper, so is not useful here. Can it be removed?

Pg 16332, line 26. fPAR is usually the fraction of PAR used by plants. Did you mean something different here?

Pg 16334, line 4. Where did the values of 50 and 140 come from?

Pg 16334, line 21 and 22. The R^2 values look about the same to me and no statistical test was performed for comparison; can you really say that some are larger and that RMSE is smaller?

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Pg 16337, line 8. Higgins is not in the reference list.

Pg 16337, line 20. You briefly mentioned grazing earlier, but it would help to add something here on the impact of both native and introduced grazers/browsers. The model appears to not consider animals that could limit establishment of woody species, or contribute to the maintenance of grassland dynamics. For many parts of the world, these factors are important in savannas.

Pg 16338, line 7. Insert “of” after “implementation”.

Pg 16342, line 15. “Acacia woodland” needs spaces.

Pg 16353, Figure 4. Label FAPAR as fPAR to be consistent with text?

Interactive comment on Biogeosciences Discuss., 12, 16313, 2015.