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Interactive comment on “A data assimilation framework for constraining upscaled cropland carbon flux seasonality and biometry with MODIS” by O. Sus et al.

Anonymous Referee #2

Received and published: 19 November 2012

The fusion, integration, or assimilation of modeled data with remote sensing has the most promise of providing gridded estimates of crop dynamics that best represent some state of reality. It is my experience that such work is not greeted in a positive manner by specialized remote sensing journals. As such, many of these papers tend to be published in crop-related journals or biogeo-related journals. Nonetheless, the topic is very important and requires more work.

The paper is well written and well organized. It is not particularly novel, but I believe that these types of approaches would benefit from more documentation and discussion in the open literature. I suggest including a few more citations on closely related work.

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Please review the papers below and include citations to them, if they are relevant.

Page. 11142, line 9-10. When discussing the use of MODIS 250m data for crop classification, you may want to acknowledge Matthew Hansen's work: Chang, J., M.C. Hansen, K. Pittman, M. Carroll, and C. DiMiceli. 2007. Corn and soybean mapping in the United States Using MODIS Time-Series Data Sets. *Agronomy Journal* 99:1654-1664.

Page 11142, line 11. You state that no study has attempted to assimilate RS time series of various field patches into a crop model". You may want to review the following paper that using Landsat-based national land cover data to estimate crop carbon dynamics: West et al. 2010. Cropland carbon fluxes in the United States: increasing geospatial resolution of inventory-based carbon accounting. *Ecological Applications* 20: 1074-1086.

The above paper also conducts a comparison to the Bondville flux site.

I have no grammatical or typographic corrections. I appreciate the opportunity to review this paper.

Interactive comment on *Biogeosciences Discuss.*, 9, 11139, 2012.

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9, C5732–C5733, 2012

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