

Interactive comment on “Quantifying the carbon uptake by vegetation for Europe on a 1 km² resolution using a remote sensing driven vegetation model” by K. Wißkirchen et al.

Anonymous Referee #1

Received and published: 4 June 2013

General Comments: The paper Quantifying the carbon uptake... by Wisskirchen et al., adds to the growing literature on model/data comparisons. This is a fairly recent trend and a worthwhile task, as far too little effort is placed on model uncertainty. The results from this paper clearly point to the difficulties that these models face in matching in-situ validations. The paper however detects rather critical shortcomings in the model but does not go far enough in discussing these problems. Both the discussion and conclusions need improvement in this regard. What do these rather large errors (ie. agriculture) imply in the Bethy model? Can they be easily explained and improved. What concrete changes to the model do the authors propose? Results from this comparison should also be described in the context of other comparisons such as the paper

C721

by Schaefer et al., 2012 doi:10.1029/2012JG001960

Specific Comments: How do you map the flux tower data onto the model data – i.e. how do you match the different resolution of the datasets? Discussion here is warranted. I think a map of the tower locations is warranted, as there are so many. Simply looking at tables is not enough. I would like to see a difference or anomaly map. Figure 1 does not really bring across the variations from year to year. One suggestion would be to create a long-term average, and subtract each year from this average. Figure 2d and 2e both show rather large discrepancies, but the r^2 is still 0.6, i.e. rather good. Please confirm that this is really true, as judging from the figure I am skeptical.

Technical Comments: Figure 3 is not referenced in the paper I think. If it should be included, justify why and please convert the x-axis so that we may more easily interpret the years. There are numerous spelling mistakes in the paper. It would benefit from a native speaker edit. Page 2469 line 13, low should in fact be high? Page 2472 line 17 do not use measured GPP, as GPP is not measured. It is modeled or estimated. Page 2472 line 20 makes no sense. Page 2473 line 7, noticeable climate change needs explanation.

Interactive comment on Geosci. Model Dev. Discuss., 6, 2457, 2013.