Earth Syst. Sci. Data Discuss., 6, C141–C144, 2013
www.earth-syst-sci-data-discuss.net/6/C141/2013/
© Author(s) 2013. This work is distributed under
the Creative Commons Attribute 3.0 License.

Open Access Earth System Science Data Discussions

ESSDD
6, C141–C144, 2013

Interactive Comment

Interactive comment on "Use of various remote sensing land cover products for PFT mapping over Siberia" *by* C. Ottlé et al.

C. Ottlé et al.

catherine.ottle@lsce.ipsl.fr

Received and published: 8 October 2013

We would like to thank Reviewer 2 for his/her relevant comments and suggestions to improve our paper, and for his/her corrections. We agree with all comments and addressed all of them as advised. All the changes were included in revision mode in the revised file and our answers to the specific comments and questions are presented below.

Specific reply to Anonymous Referee #2

This paper describes differences in a range of satellite derived global land cover products for the Siberia region and then describes a new plant functional type map derived from these data for the same region. The final product is designed for use with the

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

ORCHIDEE model. The paper makes a valuable contribution to the literature because (a)such sources of uncertainty in modelling are often ignored and (b) the final map produced will presumably be used in modelling exercises with an important land surface model. The paper is very well written and easy to follow. The manuscript has a few weakness and omissions which I feel need to be addressed prior to publication. My main concern is that despite having obtained two land cover maps based on photo-interpretation no quantitative analysis of the differences against the various satellite products has been provided. Even qualitative analysis is largely absent. On line 17,page 267 the authors say "The comparison with the CAVM product strengthens..." But I am unable to find these results in the paper. A similar comment applies to the Fedorov data also: "The comparison presented in Fig. 2, indicates clearly..." but I don't see any quantification of this statement. To me it is not obvious that Fig 2. shows this. Before this paper is published the authors should add quantitative analysis of the comparison between the various satellite products and the two photo-interpretation products. Whilst this isn't an absolute quantification of uncertainty (because the photo-interpretation will also contain errors) it will provide a much stronger means of backing up the claims that one satellite product is better than another. In addition this information will be useful for other communities wishing to use satellite land cover products hence increase the overall impact of the paper.

It is difficult to add quantitative analysis in the paper because the 2 high resolution land cover maps were not digitally available. Therefore, the comparison can only be qualitative. But to strengthen our conclusions, the qualitative analysis has been developed in section 3.2 and top images of figure 2 were also resized to better correspond to the Fedorov map.

I also think some discussion of existing uncertainty analysis in the satellite products should be included. The GLC2000 and the GlobCover products have associated confusion matrices which are based on the analysis of large amounts of higher resolution data. These matrices contain valuable information on which land cover classes are

ESSDD
6, C141–C144, 2013

CC BY

most likely to be erroneously classified as another class. Does the information in these matrices agree with your findings?

We agree that there are statistical indices like the overall accuracy of the various products which have been published but as discussed in the introduction section, these indices were calculated globally and no confusion matrix is available regionally. The accuracy is indeed much variable spatially and depends on the distribution of the ground truth datasets used for these exercises which are different for each product. This is why we prefer not to rely on these indices.

Minor comments and typos: p263,l24: "products" -> to "product" p264,l20: "sensible on" -> "sensitive to" p267,l12: "present some discrepancies." ... I think this is downplayed somewhat. The fact that the agreement on shrubs is worse between the two GlobCover products than it is between GlobCover 2005 and MODIS is quite surprising. I think you should bring this out in the main text and, if possible, suggest a reason it.

The shrub class is not well represented in the studied region. As shown in Table 4, the fraction is less than 0.5% and therefore the comparison is not significant. A threshold of 1% for the class representation has now been chosen and the statistics are computed only if the class represents more than 1% of the total number of pixels of the image. The tables were modified accordingly and the reason is now explained in the analysis in section 3.1.

p268,l24: "technic" -> "technique" p268,l25: "more performing" -> "better performing" p269,l6: "like" -> "similar to" p269,l7: "naturally" -> delete this word. p270,l12: "since the most important" -> "since the main objective" p271,l8: "have been slightly modified" -> please provide some brief details on how they have been modified (one or two sentences). Table 2. I couldn't find this referenced in the main text. Fig 8. It is difficult to read the colour bar scale against the black background. Fig 8. Caption is incorrect. It should be 0 for full agreement (etc).

Thanks for your careful reading of our manuscript, all these errors or omissions have

ESSDD

6, C141–C144, 2013

CC BY

been corrected.

Please also note the supplement to this comment:
http://www.earth-syst-sci-data-discuss.net/6/C141/2013/essdd-6-C141-2013-supplement.zip

---

Interactive comment on Earth Syst. Sci. Data Discuss., 6, 255, 2013.