

## ***Interactive comment on “Consistent EO Land Surface Products including Uncertainty Estimates” by Thomas Kaminski et al.***

### **Anonymous Referee #1**

Received and published: 24 October 2016

The manuscript describes a system to retrieve LAI, FAPAR, and background albedo from visible and near-infrared albedo satellite observations. The work is sound and thus I have no major comments regarding the described retrieval system or the presented results. However, the text is very difficult to read because very often sentences are too long and too complex, technical terms are often introduced without any prior explanation, or topic change within in one sentence. Consequently, the manuscript might be largely incomprehensible to readers with little background in the retrieval of EO products or with no knowledge in inverse modelling. However, the title suggests that the paper describes a generation and evaluation of EO products which will be likely often cited by users of these products. Consequently, the paper should be written so that is comprehensible to a wide user community. In summary, I request to carefully revise the manuscript in terms of language and writing style.

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## Title of the manuscript

I think that the title of the manuscript does not fit to the content. From the title, I'm expecting a description of the retrieval system and a detailed analysis and evaluation of the products. Furthermore, I'm expecting a link where to receive the data or any other statement about how to receive the data. However, the manuscript mainly describes the retrieval system and some key properties of the retrieved products. The chapter on the product validation is rather a discussion on several possibilities how to validate the system or the products than an intense validation. Therefore I suggest to revise the title of the manuscript so that it rather gives a focus on the description of the processing system than the products.

## Writing style

Many sentences are generally difficult to read because #1 they are very long; #2 they cover several topics, concepts, or ideas; or #3 the flow is interrupted by insertions like "e.g.", "i.e.", "for example", "however", or by references. Such sentences are for example on lines 27-30, 33-37, 37-39, 40-43, 44-46, 50-53, 63-67, 113-116, 215-217, and 341-344. I suggest to shorten sentences, to remove insertions, and to place references at the end of sentences. Additionally, term like "for example" or "however" should be rather at the beginning of sentences than within sentences. The text needs to be revised in order to reduce the complexity of sentences and to make it more comprehensible.

## Detailed remarks

- Lines 28-30: The sentence is difficult to understand because the position of references split the flow. Please place all references at the end of the sentence.
- Lines 40-41: The text requires a high level of knowledge from the reader. For example, in this sentence the term "observation operator" is introduced just within two brackets. I think the text could be much more comprehensive if these kind of insertions are removed from sentences and are explained of defined afterwards in a second

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sentence.

- Lines 93-96: This part would be easier to understand if you shortly define Lambertian scattering.
- Line 238: Use capital letters for the beginning of the sentence.
- Lines 294-296: “is exhibits” is likely wrong.
- Line 297: “bottom right panel” = Fig. 5 f
- Line 354-369: The purpose of this paragraph is unclear to me. Please provide first an introductory sentence that describes why the Beer-Bouguer-Lambert law is introduced here and how it relates to the validation of the product.
- Figure 7: Please explain shortly potential reasons for the differences because they seem to be associated with certain vegetation types, e.g. overestimation of "wrong" in transitional regions and underestimations in boreal forests.
- Table 1: Can you please indicate in the table legend or footnote why there are two mean values for the  $\omega_l$  parameters.
- Figure 3: The figure would be much easier to understand if you could provide some more details on the shown data without forcing the reader to go to the original publication. What do the points represent? Are these results from measurements or model outputs? From which regions or ecosystems are the measurements?
- Figures 4 and 5: The colour legends show that black is used for snow. However, I'm irritated from this legend because I don't see that black colour is used in any of these plots. Additionally, I think it is not necessary to indicate snow in these plots. Do I overlook something or could you remove the snow/black entry of the legend?
- Figure 8: The figure and the labels are too small. Please increase especially the size of labels.

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