**Geoscientific
Model Development
Discussions**

Interactive comment on "ECOCLIMAP-II/Europe: a twofold database of ecosystems and surface parameters at 1-km resolution based on satellite information for use in land surface, meteorological and climate models" *by* S. Faroux et al.

Anonymous Referee #2

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General comments:

The authors introduce a new dataset (ECOCLIMAP-II) of land cover and related sur-face parameters (like roughness length, albedo, root depth, and others) for Europe. Such datasets are mandatory for numerical weather prediction and climate models, and as the authors point out, need to be updated from time to time. The derivation of the new dataset is based on two vegetation related variables, the leaf area index (LAI) and the NDVI, which are both satellite derived, allowing rather high spatial and tempo-ral resolution of the final product. An advantage of the new dataset is that it is based on

multi-annual consistent satellite observations, whereas products like ECOCLIMAP-I re-fer only to single annual cycles of satellite data The authors point out that one demand of the new dataset is a better regional characterization of land cover in accordance with the climatic environments of the different regions in Europe (latitude, continental or marine climate, topography). Of course, this could help to improve climate simula-tions for climate sensitive regions like the Mediterranean. Already from these points of view the paper it worth to be published The authors also perform validations exercises using three different databases. Unfortunately, the validations using the high resolution French dataset AGRESTE and the high resolution satellite product FORMOSAT-2 con-centrate only on France. A validation for other region in Europe would be desirable. I doubt a little bit whether the comparison with ISLSCP2 C4 data, which have a rough resolution of 1°, is of real value in the sense of validation. The authors also present a comparison of the new ECOCLIMAP-II dataset with ECOCLIMAP-I, which is certainly necessary. But only the differences between the two products are described. But this does not tell the reader and the potential user of the new dataset whether it is really better than the old one. For instance, is the higher representation of broadleaf trees in central Russia and their tendency to disappear from the Mediterranean regions more realistic than in ECOCLIMAP-I (Section 5.3.2, Fig. 11 d)? Or is the complete modi-fication of the distribution of wetlands in ECOCLIMAP-II (Section 5.3.2, Fig.11l) more realistic? These questions can be summarized by the more general questions: what is the impact of the new dataset when being applied in NWP or regional climate simula-tions? Can the modeller expect an improvement of his results? Solely from reading the paper the potential user of the new dataset cannot answer these questions. In addition, for a modeller, who perhaps is not an expert in the generation of land cover datasets, the paper is not easy to read and to understand. Especially, the implementation of the ECOCLIMAP-II database (Chapter 4) is hard to read.

In summary: the paper describes an important study which should be published. However, in order to increase the value of the paper the authors should try to describe their methodologies in a more understandable manner, understandable for interested

readers who are not experts in the author's research fields. Although there are a lot of references, the reader should be able to follow the methods without reading additional literature. The authors should spend some effort to explain briefly the different terms, and their possible relationship. For instance, what is the difference, respectively the relationship, between land cover classes and PFTs? There are some more questions and suggestions in the specific comments, which are attached in a PDF-document.

Please also note the supplement to this comment:
http://www.geosci-model-dev-discuss.net/5/C1073/2012/gmdd-5-C1073-2012-supplement.pdf

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