

Interactive comment on “Improving arable land heterogeneity information in available land cover products for land surface modelling using MERIS NDVI data” by F. Zabel et al.

F. Zabel et al.

f.zabel@iggf.geo.uni-muenchen.de

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Dear Ms. Avellan,

Thank you for your sophisticated comments. We thankfully included the splitting of section 2.3 into 3 sub-chapters, as you remarked.

The marginal change of NDVI of less than 0.1 between the two NDVI scenes was treated as being within a range of uncertainty. That was the criteria for classifying these pixels as 'equally active'.

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As the results and the conclusions sections both were completely reconstructed during the revision process, as can be found in the answer to reviewer #3, we hope that we are able to improve these sections. The lack of understanding the improvements in the resulting land use/cover map in comparison to the CLC classification will hopefully be solved.

By changing the legend of Figure 7 (attached), the new legend summarizes the individual classes to generic categories. This clarifies the improvement of the new land use/cover approach more clearly since the original CLC classification treats most of the arable land classes homogeneously as just one class of 'arable land'.

The domination of maize in the Upper Rhine valley and the spatial patterns in the Po-valley are obvious in Fig. 7. Therefore, a zoom image as you suggested is not mandatory from our point of view. However, a separate figure of the new land use/cover approach could be helpful for the Upper Danube catchment in order to contribute to a better understanding of the spatial behaviour of evapotranspiration in the results section. So far, we added a borderline of the Upper Danube catchment in Fig. 7 (attached) that also could have the same effect without the need of a separated figure.

The analyses of latent heat flux in section 3.2 were replaced. Therefore, we hope that the last point of your remarks is lapsed. Since a plant parameterization of the class 'arable land' is not sensible, all arable land was consequently reclassified to maize (CLC maize) respectively winter wheat (CLC winter wheat). Maize and winter wheat were assumed to represent summer (maize) and spring crops (winter wheat) respectively as these classes state two possible extremes in their specific phenological behaviour within the arable land.

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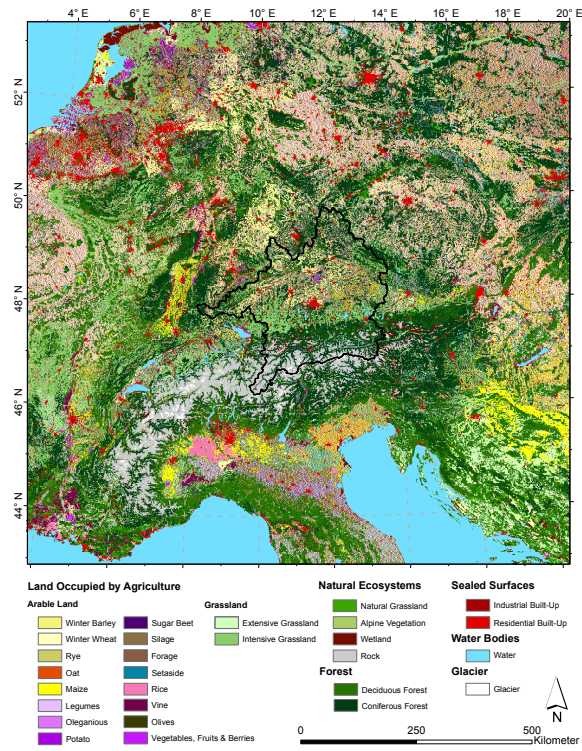


Fig. 1.

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