

Interactive comment on “Role of land surface processes and diffuse/direct radiation partitioning in simulating the European climate” by E. L. Davin and S. I. Seneviratne

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We thank reviewer #2 for the useful comments, which are reproduced and answered below.

Figure 8. The discussion on page 11613 is inconsistent with the panels, i.e., the panels are mislabeled in the text with respect to photosynthesis and evapotranspiration. Also, why is ET shown as an absolute difference, but transpiration and photosynthesis are percentage differences? Consistent use of absolute difference might be clearer to readers.

Response: This has been fixed. Also, photosynthesis, transpiration and evapotranspiration are now all plotted in terms of relative change (now figure 7). We chose to show relative differences because this allows to better underline that 1) photosynthesis is more sensitive to diffuse light than transpiration (i.e., increase in water use efficiency with more diffuse light) and 2) transpiration is more sensitive than total ET (due to compensating effect from ground evaporation).

Figure 9. The difference between the two simulations is quite small. A third panel that shows this difference is needed.

Response: A figure has been added to show the temperature difference between the 2 experiments (see response to reviewer #1)

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Interactive comment on Biogeosciences Discuss., 8, 11601, 2011.