

Interactive comment on “Remotely sensed land-surface energy fluxes at sub-field scale in heterogeneous agricultural landscape and coniferous plantation” by R. Guzinski et al.

R. Guzinski et al.

rag@geo.ku.dk

Received and published: 3 July 2014

We would like to thank the reviewer for his positive feedback and interesting suggestions. Please find our replies below the questions.

Section 4.3.1 : air temperature seems to be one of the main factors affecting the accuracy/ uncertainty in high-resolution modeled fluxes. Could the sensitivity of TSEB-DTD to initial air temperature be assessed ? Since the initial air temperature is modified in a two-step procedure (Section 3.3 page 5) 1/ by the physically based TSEB-DTD coupling scheme (step 5) and 2/ by an empirical smoothing filter (step 6), one may wonder how far the resulting air temperature is from the initial (step 3) and intermediate (step

C3187

5) value. When setting the initial value to ERA Interim (instead of tower measured) air temperature, would a lower difference between the resulting and initial value support the better accuracy in flux estimates ? What is the impact of the smoothing filter on the disaggregated fluxes?

This is an interesting suggestion and will be investigated in the revised paper. We will provide a plot of the average air temperature within the flux tower footprint at three different stages of the disaggregation procedure: 1) the initial air temperature (tower measured or from ERA Interim); 2) air temperature after step 5 of the disaggregation procedure, 3) air temperature after step 6 (smoothing) of the disaggregation procedure. This should help to answer the two questions posed by the reviewer: the impact of the difference between initial and resulting air temperature values and the impact of the smoothing filter on the accuracy of modelled fluxes. However, it should be noted that the value of the derived air temperature does not necessarily reflect the actual air temperature. This is because the value is derived to compensate any errors in the Landsat LST and to ensure consistent fluxes between the DTD and disaggregated estimates.

Interactive comment on Biogeosciences Discuss., 11, 4857, 2014.

C3188