Biogeosciences Discuss., 7, C328–C330, 2010
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Biogeosciences Discussions

Interactive comment on "Analyzing the major drivers of NEE in an alpine Mediterranean shrubland" *by* B. R. Reverter et al.

B. R. Reverter et al.

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Reply to major comments:

(This paragraph is common to our replies to Referees 1 and 2) The additional carbon loss, previously masked due to sensor heating, was calculated correctly according to the Burba formulations. We checked this multiple times prior to submitting the manuscript, including using Li-Cor's own spreadsheet calculations (kindly provided to us by George Burba), which produced results that match ours for both years.

Reply to minor comment 1:

We cited Reichstein et al. 2005 when explaining the gap-filling method used. We agree with the referee that further information may be important. Therefore we propose to

include in our revision the web link, in which every detail of the gap-filling technique is explained, in addition to the reference.

Reply to minor comment 2:

We thank the referee for noticing these errors. We will correct them.

Reply to minor comment 3:

We have requested nearby precipitation measurements and will include them.

Reply to minor comment 4:

In our original manuscript, we assumed the Burba correction to be necessary for avoiding dubious carbon uptake, so that all data presented in the manuscript included the correction. Additionally, section 3.7 provides information regarding the NEE determine both with and without this correction. We will make this clearer in the revision.

Reply to minor comment 5:

The two years presented different patterns in snow cover. We attribute such differences in NEE to differences in snow melt for these two years. Although this is somewhat unclear due to missing radiation data, we know from visiting the site that there was no snow cover following the melt around day 84 of 2008. By contrast, the entire period highlighted by the referee was snow-covered in 2007 (see Figure 1d). Snow cover protects the soil from extremely low temperatures, and thus allows sizeable respiration compared with the snow-free frozen ground (see Monson et al., 2006, Nature, 439, 711-714). We had thought that this was stated clearly in the manuscript, but not until Section 3.6: “Differences in the length and strength of the growing season and in the timing of the rain and snow fall seem to be responsible for general NEE disparities between the two years.” However, in the revision we propose to reinforce this point, by adding a sentence at line 3 of p678, emphasising this difference between the two years that the referee has insightfully identified.

BGD

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Reply to minor comment 6:

We also think that a second growing season took place prior to the winter of 2008. Nevertheless, it was much less visible if compared to that one of 2007.

Reply to minor comment 7:

This has been answered in the reply to major comments.

Interactive comment on Biogeosciences Discuss., 7, 671, 2010.