

**Comments to Reviewer 1 of “Bulk partitioning the growing season net ecosystem exchange of CO<sub>2</sub> in Siberian tundra reveals the seasonality of its carbon sequestration strength” by B. R. K. Runkle et al.”**

REFEREE 1: The paper discusses an interesting approach to estimate flux partitioning accounting for the seasonal change in respiration. The manuscript is well-written, even if some sentences are awkward, and would require revision to improve the flow. Also, some details needs to be specified (see specific comments).

**We thank Referee 1 for providing helpful comments to improve and clarify the text; these suggestions were all implemented and the text was generally revised to improve its flow.**

Specific comments:

Lines 2-4 Page 13715: this sentence is too long split on two? Also “there exist” is a bit awkward, rephrase?  
**This change was performed as suggested.**

Line26-27 Page13716: Should the photoinhibition occur when the radiation is higher not lower than a certain value?  
Clarify or correct

**This issue is clarified in the text and also in the response to the second reviewer; the original article (Murray et al 1993) used a light-treatment test with light levels 800, 340, 150 umol/m<sup>2</sup>/s. The reported stress occurred in the 800 umol/m<sup>2</sup>/s treatment, but this does not mean the threshold begins only at such a light level – the real threshold would be between 340 and 800 umol/m<sup>2</sup>/s, and 500 umol is a reasonable intermediate choice.**

Line 14 Page 13719: what is “uninterruptible”?

**A correction has been implemented to reflect that this is part of the name of this device type. Uninterruptible power supplies help provide stable AC power when there are changes in the incoming power supply from a generator. They can also provide AC power from batteries if the normal power system (e.g., generator) fails.**

Lines 3-4 Page 13724: awkward sentence, rephrase?

**This change was performed as suggested.**

Line 7 Page 13725: Light stress is something characteristics of Sphagnum dominated environment, it would be interesting to mention how much of your % cover are vascular plants and how much mosses? Adding an estimate of LAI would help in estimate the importance of vascular plants to the overall NEE.

**That mosses and vascular plants cover 95% and 30%, respectively, of the ground surface is now written into the site description.**

Line 19 Page 13725: which threshold? Specify

**That “this threshold” refers to the “threshold temperature” for generating a positive mid-day NEE is now clarified in the text.**

Line 1 Page 13728: what low humidity refers to? Specify

**That this range refers to VPD > 1 kPa is now clarified.**