

Authors' reply to the Editor's comments ("Editor Decision: Publish subject to technical corrections (30 Jul 2014) by Georg Wohlfahrt") on "Monitoring of carbon dioxide fluxes in a subalpine grassland ecosystem of the Italian Alps using a multispectral sensor" (Sakowska et al.):

Dear Editor,

thank you for the assessment of the manuscript. The Editor will find the responses (R) to comments (C) in the table below.

Editor's comments to the Author:
<p>The ms has undergone a review by two reviewers and one of these has assessed the revised version again. Reviews were generally positive with reviewers suggesting minor/major changes. Based on the reply to the reviewer comments and the second assessment of reviewer #1 and my own assessment I think that the authors have responded adequately to the reviewer comments and have improved the revised ms by adding further analysis. I thus accept the ms, but ask the authors to include the following technical changes to the ms:</p> <p>C1: p. 1, l. 21: „... in a subalpine grassland of the Italian Alps.“</p> <p>C2: Throughout ms – use carbon dioxide or CO₂ instead of carbon if you actually mean CO₂, as there are many other gaseous forms of carbon that are exchange between ecosystems and the atmosphere (CH₄, CO, VOC, ...)</p> <p>C3: p. 5, l. 1: you mean alpine with regard to the Alps or generally the alpine elevational belt? If the geographic region of the Alps is meant, please use "Alps"</p> <p>C4: p.7, l. 20: „... the concept of the LUE model, i.e. Eq. 1) ...“</p> <p>C5: Figure 7 is never cited</p>
Author's Response to the Editor:
<p>R1: According to the Editor's comment, the sentence (P1L19-P1L22) of the "Abstract" section was reworded as follows: "The study investigates the potential of a commercially available proximal sensing system - based on a 16-band multispectral sensor - for monitoring mean midday gross ecosystem production (GEP_m) in a subalpine grassland of the Italian Alps equipped</p>

with an eddy covariance flux tower.”

R2: In the whole manuscript the word “carbon” was replaced with “carbon dioxide”. The above mentioned change was applied in the following pages and lines: P2L18, P2L22 and P13L2.

R3: In the manuscript we refer to the geographic region of the Alps, thus the sentence in P4L30-P5L1 was reworded as follows: “The vegetation of the area is dominated by *Festuca rubra* (L.) (covering 25% of the area), *Nardus stricta* (L.) (13%) and *Trifolium sp.* (L.) (14.5%), and is representative of a typical low productive meadow of the Alps.”

R4: The sentence (P7L19-P7L20) of the section “Models for GEP_m estimation” was extended with a reference to the Equation 1 as follows: “In order to estimate GEP_m we used two approaches, one based on linear regression (using the concept of the LUE model, i.e. Eq. 1) and the other on multiple regression.”

R5: Figure 7 is not presented in the last version of the manuscript.