

## ***Interactive comment on “Effects of environmental factors and soil properties on topographic variations of soil respiration” by K. Tamai***

**Anonymous Referee #3**

Received and published: 11 January 2010

**General comments** The paper by K. Tamai represents a good endeavor to estimate the comparative significance of climatic and soil quality factors on soil respiration in mountain forest ecosystems. In this context, this work is definitely in the scope of the journal and worth publishing in BG. However, the manuscript needs very deep revision and re-writing before being accepted for publication. The paper was designed inaccurately, e.g. without taking into account whether the abbreviation is properly explained in the text beforehand etc. Practically all the parts of the article are to be re-written to be more understandable and consistent with general standards accepted for scientific publications.

No scientific hypothesis was suggested either in ‘Introduction’, as a starting point for stating specific goals of the research, or in ‘Discussion’, as a quintessence of the data

C3874

obtained by the authors. The ‘Discussion’ section should be completely re-written, so that to give a reader an idea on how the new information obtained by Tamai et al. could be explained in a broader scientific context and correspond to the to date level of our knowledge on the topic.

The level of English is such unsatisfactory that it sometimes makes difficult to follow the outline, results and discussion. Deep linguistic revision by native English speaker is absolutely urgent!!!

**Specific comments**

Abstract Page 10936 L2. Terms ‘mature soil’ and ‘immature soil’ seem not strictly scientific. Can they be replaced e.g. by the depth of soil profile? L3. Strictly, speaking, soil temperature and moisture are also ‘soil properties’. I suggest the use of ‘chemical composition’ and ‘climatic conditions’ would be more preferable to the case. L9. “Plot L” was not specified beforehand; therefore, this term should be replaced by less specific description/name (plot under mature/immature soil or something like that).

Introduction Page10937 L10 – 20. It is necessary to separate “our data”, with Tamai et al as authors, from the “literature data” or “data obtained by others”. Otherwise, this chapter seems to look weird.

**Results**

Page 10944 L1-2. What does ‘soil repellency’ mean? Water repellency? I would recommend describing the phenomenon in more detail.

**Discussion**

As a matter of fact, the major part of the ‘Discussion’ section is just an explanation of/a number of speculations on why the authors argue that temperature and wetness factors are critical in Yamashiro forest on ‘immature’ soil, while in Kahoku forest they do not. I believe this should be assigned to ‘Results’ section rather than to ‘Discussion’. I am sure the ‘ideology’ of the Discussion should be based on the following order: the

C3875

novelty of authors' principle results – what was done before by other authors – how the data by Tamai et al. correspond to the literature data – why they correspond (or DO NOT correspond?) to the other data – hypothesis explaining the data – prospective of further research on the topic, taking into account the lack of information on this or that. Otherwise, the manuscript is lacking basic structure in the description of the experimental data and authors' explanation of the data obtained.

---

Interactive comment on Biogeosciences Discuss., 6, 10935, 2009.

C3876