

## ***Interactive comment on “Above- and below-ground response to soil moisture change on an alpine wetland ecosystem in the Qinghai-Tibetan Plateau, China” by G.-L. Wu et al.***

**Anonymous Referee #2**

Received and published: 17 October 2011

General comments:

I had a great deal of difficulty in reading this manuscript. The authors used long complicated sentences with poor grammar, which made it difficult to understand what they wanted to say. The entire manuscript requires a very thorough editing to correct this problem.

The objective of the paper is to determine the above and below ground response to soil moisture. The moisture data used to achieve this goal were determined on a weight basis and, as is explained below, this makes the comparisons of their findings unreliable and questionable. I suggest that they redo the analysis using soil moisture

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content determined on a volume basis.

I would suggest that, before this paper is published, these two major changes be carried out in addition to the specific comments listed below.

Specific comments:

Page 7144, lines 20-26. This part should be incorporated in the methods section.

Page 7145, Subtitle 2.1. “Study description” should be changed to “Study area.”

Page 7146, line 1. What is Humic alpine (felty soil)? Please give the soil classification in either the WRB or the US Soil Taxonomy.

Page 7146, lines 20-21. Soil moisture determined on a weight basis is very misleading. Moisture content on a weight basis for soils with high organic matter and soils with low organic matter are far apart even though these two soils have the same moisture content on a volume basis.

Page 7146, lines 21-23. This sentence ends with “then fixed them.” What does “then fixed them” mean?

Page 7147, line 2. Omit “in laboratory” at the end of sentence.

Page 7147, line 7. Omit “properties”. The sentence should read: All vegetation and soil data were expressed. ....

Page 7147, lines 9-12. The sentence starting with “Test of between subjects” is not clear. It should be re-written.

Page 7148, lines 23-28. Comparison of soil moisture values determined on a weight basis for upper and lower layers is very unreliable. For comparison, moisture content determined on a volume basis should be used.

Page 7148, line 23. What properties of the sample site affect the soil moisture regime? The paper gives no information on soil properties such as texture and organic matter

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content which also affect soil moisture.

Page 7148, line 28 to Page 7149, line 1. It would be better to state that the pH, N, C, etc. varied between sample sites, probably as a result of differences in soil properties. The authors, however, presented no data on soil properties.

Page 7149, line 28. What was the range of slopes (by percent) for these wetlands? This information should be given in the Materials and Methods section.

Page 7149, line 26 to Page 7150, line 14 (section 3.3). It is very difficult to read this section since it contains mainly numerical values with very little text. This section should be reorganized to make it easier to read. Perhaps some of the numerical values should be presented in table form.

Page 7151, lines 4-7. This is a very complex sentence. I would write it this way: Variations in the average annual precipitation and air temperatures show a decreasing trend in rainfall and an increasing trend in temperature, resulting in increased aridity.

Page 7162, Table 2. Since some of the soil moisture contents presented in this table are well above 100% this would indicate that these moisture values were determined on a weight basis. This should be stated in this table.

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Interactive comment on Biogeosciences Discuss., 8, 7141, 2011.