

Interactive comment on “Stability and biodegradability of humic substances from Arctic soils of Western Siberia: insights from ¹³C-NMR spectroscopy and elemental analysis” by E. Ejarque and E. Abakumov

Anonymous Referee #1

Received and published: 4 November 2015

The paper submitted by Ejarque and Abakumov fits in the scope of SE and represents an advance in the knowledge of the soils of western Siberia. I recommend this paper to be published, however, some questions have to be revised before be accepted.

Please find bellow my suggestions

Page 3022 Abstract Introduction Line 23-25: I sugest to complete this part with the information provided by these papers: "Sedimentological characteristics of ice-wedge

C1275

polygon terrain in Adventdalen (Svalbard) – environmental and climatic implications for the late Holocene (<http://www.solid-earth.net/5/901/2014/se-5-901-2014.pdf>) Soil processes in cold-climate environments (<http://www.solid-earth.net/5/1205/2014/se-5-1205-2014.pdf>) Future avenues for permafrost science from the perspective of early career researchers (<http://www.the-cryosphere.net/9/1715/2015/tc-9-1715-2015.pdf>)
Page 3023 Line 1: “Over” or “high” Line 8: Please precise the changes in land cover
Page 3024 Line 4-5: Please show theses studies. I suggest this here: Oliva, M. & Ruiz-Fernández, J. (2015). Coupling patterns between paraglacial and permafrost degradation responses in Antarctica. *Earth Surface Processes and Landforms*, 40 (9): 1227-1238. Line 19-3(Page 3025): This part should be placed in the description of the study site, not in the introduction Page 3025: Line 4: Delete “general” Line 10” Delete “More specifically” Methods Page 3026: Line 9-11: This is a repetition, please delete it. Line 21: Provide the citation of the guidelines that you used for soil classification. It was WRB?. Do it here and elsewhere in the paper. Page 3027: Line 26: Normally soil chemical analysis are carried out with 2mm mesh, Why did you used 1mm? Page 3029: Line 23-24: Have you observed if data respected the homogeneity of the variances and the normality before use the parametric Pearson correlation coefficient? Parametric tests only can be used if data follow respect these requirements. At which p level, the correlation(s) were considered significant? Line 25: Which multivariate model you used? Page 3031 Results Line 23: What this means? Page 3032 Line 1-2: Show the coefficient of correlation and the p<value. Delete “df = 8 F = 8.035”. Is this the r² or the adjusted r²? Page 3034: 13-15: Show the coefficient of correlation and the p<value Delete “df = 8, F = 10.86”. Is this the r² or the adjusted r²? Page 3036 Conclusions Line 10-18: Please synthesise your results and do not discuss them here. Rearrange this part of the conclusions Figures Figure 2: Increase the size of the font of the picture letters Figure 3: Please do this figure in colour. I presume that the values in parenthesis represent the soil depths. Mention this in the figure caption. The figure caption should be changed. Change “diagram” by “scatterplot” Figure 4 and 5: If possible do these figures in colour. Like this is very difficult for the reader to understand it.

C1276

Figure 6: Rearrange this figure and use colors. Some information is overlapped. Like this some important information can be lost or misunderstood.

Interactive comment on Solid Earth Discuss., 7, 3021, 2015.

C1277