

Interactive comment on “Carbon dynamics in boreal peat-lands of the Yenisey region, Western Siberia” by E. D. Schulze et al.

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Received and published: 29 September 2015

The manuscript presented by Schulze et al., presents interesting data on carbon dynamics in boreal peatlands. Thanks to different measurements (^{14}C , DOC, POC, vegetation surveys, plant macrofossil) they reconstruct the history of the peatland formation. The paper is quite well written and the reading is pleasant. The authors have an important amount of data and they did a great job to organize them and find a story that makes sense. I believe that this would be a important paper in particular because it shows that thawing permafrost peat does not automatically induce carbon emissions into the atmosphere.

Nevertheless, I have one main concern. At page 11290, the authors mentioned the presence of ashes differently distributed in depths and between the profiles. I guess

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that those ashes came from vegetation burning and are not lignite (in this case the age of C in ashes is close to infinity and the determination of the age is almost impossible). The ^{14}C content of ashes coming from vegetation burning are close to the amount ^{14}C in the vegetation (see Regev et al., 2011 for instance). Therefore the age of the C is biased to younger ages. Since the distribution of the ash is not uniform it might add noise to the data and it is not clear how the authors deal with this.

Minor comments:

p11289 I-5: This sentence suggests that the stocks are linearly related whereas Fig. 4 shows that this is the case but for the age. Please clarify.

p11291 I-22: Please clarify how the 2% value is calculated.

p11297 I-9: Please correct “seperation”

Fig. 2 I guess the bold numbers are the age, please clarify the legend.

Reference cited: Regev, L., Eckmeier, E., Mintz, E., Weiner, S., Boaretto, E., 2011. Radiocarbon Concentrations of Wood Ash Calcite: Potential for Dating. Radiocarbon 53, 117–127.

Interactive comment on Biogeosciences Discuss., 12, 11279, 2015.