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Interactive comment on “Baseline characteristics of climate, permafrost, and land cover from a new permafrost observatory in the Lena River Delta, Siberia (1998–2011)” by J. Boike et al.

Anonymous Referee #3

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General comments

The paper contributes field data from north Siberian tundra, a region that is poorly investigated, but of high importance for potential climate – soil carbon feedbacks. Although this description of baseline characteristics might not be appealing for a wide audience, I do think it is important to have such data published for comparisons with other research sites in Arctic tundra and for modeling purposes. I agree with the other referees that it should be more clear what the site is representing, for example in comparison with other Siberian sites. In terms of vegetation I am not so sure whether the polygonal tundra on Samoylov Island is representing Siberian lowland tundra. Very

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common tundra species, e.g. Eriophorum and Betula species seem to be missing, see for example De Klerk et al. 2011.

Detailed comments

p.13629, I.4 You mean late Pleistocene river terraces?

p.13633, I.13-28 Very good that you describe how the polygonal pattern is formed. How are the thermokarst lakes formed? On the next page you describe that the larger ponds represent transitional states, suggesting that ponds develop into thermokarst lakes. What is the mechanism behind this?

p.13635, I.3 You mention first terrace. Is there also a second terrace?

p.13642 I am surprised that there is so little difference in active layer thickness between dry and wet tundra. I thought that wetter places have larger thaw depths because of the heat conducting properties of water. Is there an explanation for the similarity of dry and wet tundra with respect to thawing depth?

6.1 Land cover classification, vegetation, and soils. This section does not contain a comparison of vegetation

Table 1. The sum of percentages is much more than 100%. It is not clear that the percentages relate to polygonal tundra and flood plain respectively. Make this more clear, for example by indenting the subcategories.

Table 3. Guess porosity is in m³ m⁻³?

Table 6. Mean ground temperature at 45/51 cm depth?

Fig. 4. Is TOC in vol%?

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