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Interactive comment on "Past freeze and thaw cycling in the margin of the El'gygytgyn Crater deduced from a 141 m long permafrost record" *by* G. Schwamborn et al.

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Thanks to careful reading by Thomas Opel I added some statements, corrected some lines, and modified the figure captions:

p. 3999, l. 25: . . . humidity, sea surface temperature and wind speed

p. 4003, l. 19: . . . values overall slightly decrease

p. 4004, l. 5: . . . values increase

p. 4004, l. 17: . . . between -170.3‰ (δD min.) and -138.0‰ (δD max.) around a mean of -150.7‰ (δD mean)

p. 4009, l. 8: . . . with the least negative

p. 4012, l. 10: . . .likely (deleted)

p. 4012, l. 7: . . . show three sections; the first one between 50 m and 20 m core depth (in HZs 3 and 4) with decreasing δ values, and the second one between 15 m and 10 m core depth (in HZ 5) with increasing δ values, the third one between 10 m and 5 m again with increasing δ values.

p. 4012, l. 17: . . . between 24.25 and 16.2 m and between 10.1 and 9.1 m core depth; these

p. 4015, l. 9: . . . (Lacelle, 2011). However, this freeze-back is not distinctly captured by the d excess trend, which even shows a reversal trend between 15 and 8 m core depth. Probably the speed of re-freezing the slope took place fairly quickly at the site.

p. 4015, l. 18: . . . migrated quickly

p. 4015, l. 20: . . .layers. This seemingly contradicts the observation that ions should be pushed downward as a result of downward freezing (Mackay and Lavkulich, 1974; Qui et al., 1988), but might be explainable, if the speed of freezing is high enough to enclose high ion concentrations in the pore space. In fact, the water content varies in HZ 5 allowing presumably for quicker freezing of the layers with little water content and preventing a diffusion of ions away from the front. This may have created the alternation of many relatively high and low concentrated layers in HZ 5. Still, also the temperature of the freezing front will vary with the amount of water available and the rate at which it is supplied to the front and the temperature gradient (O'Sullivan, 1963).

p. 4016, 5. : . . . -22‰ from the top to the bottom.

Figure captions:

Some figure captions have been confused; Caption of "Fig. 5 . . ." belongs to Figure 6 Caption of "Fig. 6 . . ." belongs to Figure 7 Caption of "Fig. 7 . . ." belongs to Figure 5

CPD

9, C2542–C2544, 2013

In Fig. 4 the boundary between HZ 7 and HZ 6 has been adjusted to be at 5.0 m core depth.

Interactive comment on Clim. Past Discuss., 9, 3993, 2013.