

***Interactive comment on “A 16-year record (2002–2017) of permafrost, active layer, and meteorological conditions at the Samoylov Island Arctic permafrost research site, Lena River Delta, northern Siberia: an opportunity to validate remote sensing data and land surface, snow, and permafrost models” by Julia Boike et al.***

**R. L. H. Essery (Referee)**

richard.essery@ed.ac.uk

Received and published: 22 August 2018

This is a very valuable dataset, considering the lack of well-maintained and quality-controlled long-term records in the Arctic, but it does not quite live up to the claim of utility for validation of land surface models. Gaps in validation data are not a prob-

Printer-friendly version

Discussion paper



lem, but such models cannot handle gaps in their driving data. I entirely understand why measurements of solid precipitation are difficult, but the entire lack of such measurements in particular is fatal. The Level 2 meteorological dataset available from PANGAEA combines data from multiple sensors, but gaps are not filled and physically impossible values have not been replaced. If a fully gap filled and despiked Level 3 meteorological dataset is beyond the scope of this paper, the potential uses of the data would be greatly expanded if the corrected reanalysis data used by Chadburn et al. (2017) could also be included in the archive.

#### Minor comments

line 32: Snow could also be mentioned as being involved in positive feedbacks and links to energy balance.

line 38: It took me a long time to understand why datasets in this paper start in 2002 if observations began in 1998; I think it is because data from 1998 onwards have already been documented in Boike et al. (2013).

line 50: I would use the English word “level” in place of “niveau”.

line 103: “starts at the end of May”

line 116: Is the intended meaning here “at a few” or “at only a few”? The emphases is different.

line 119: Replace “thereof” with “of which”

line 186: The air may have been stagnant, but I think that “constant air temperature values” is intended here.

line 219: Errors for snow-covered radiometers could be much more than 10%, but comparison of outgoing and incoming shortwave radiation gives some indication of when this has occurred (flag 8?).

line 239: Date for placement of the metal plate differs by a year between here and the

Printer-friendly version

Discussion paper



caption of Figure B4. Why does the snow depth appear to be constant for a long period in 2017?

line 260: That is Figure 4 of Gouttevin et al., not here.

line 378: In the absence of calibration, why is a probe constant different from the recommendation chosen?

line 499: Incomplete sentence

Figure 4 (which might instead be described as Table 4) misses a bar for 3.5 months of HMP155A.

---

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-82>, 2018.

Printer-friendly version

Discussion paper

