

Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on **essd-2021-464**

Anonymous Referee #1

Referee comment on "A decade of glaciological and meteorological observations in the Arctic (Werenskioldbreen, Svalbard)" by Dariusz Ignatiuk et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-464-RC1>, 2022

This paper quickly present the main results of about 10 year of meteorological and glaciological measurements taken at an arctic site in Svalbard. The contribution is certainly of high value in terms of data provision and I suggest its publication after few minor corrections, see below.

The main issue I see, maybe not strictly related to the paper, is the fact that following the link <https://ppdb.us.edu.pl> it's not easy to find the data pertaining to this paper. It's not immediately clear how to reach Geonetwork or OPeNDAP HYRAX and the datasets described in Geonetwork don't contain the direct links to the data files. I would suggest to include the links in it. It was easier to follow the Zenodo links.

Minor comments:

L32-33 please provide a reference for the climatological normal. If the references are the links reported at L35, I would suggest to declare them earlier in the text. Something like "according to..."

L41 to which specific "disparities" are you referring to? Please clarify.

L47 "is a well-studied..."

L49 "glacier covered an area..." I suggest to use the past form.

L50 I would suggest to specify that Slyngfjellbreen is the south-east part of Werenskioldbreen.

L73 "downwelling" instead of "upwelling"?

Table1 Accuracy of the HMP155 sensor is not correct.

Table1 HMP45AC is from HOBO?

L91 Specify the month(s) corresponding to the end of the ablation season, as done for the accumulation season.

L96 boreholes have been drilled "on" the stakes? You mean "at" or "near"?

L111 SWE already defined at L93

L116 "and another from Pleiades..."

L131 did you checked the meaningfulness of these trends?

L135 I would say that the height of the sun is the first responsible for daily variations.

L140 Could you provide estimates of albedo for snow and ice obtained from your measurements?

L155-163 I would like to see here some description on how the point mass balance is calculated. There is only a light sentence like "based on physical parameters of snow and ice".

Figure3 Please correct the y label "equivalent". Also, I would draw the zero line.

Figure4 Whiskers are difficult to see. And please try to explain better what they represent. What does it mean "an error"?

L222 I'm not sure is correct to use the expression "increases by -014". I would use "decrease by 0.14" also for the summer balance.

Eq 2 and 3 What is n? What is Δt ? I would like to see a clearer description of the equations.

L245 Melting is assumed to be zero when the temperature is positive?