

Data Paper

Sakae Kudoh, Tomotake Wada, Sho Shimada, Masahiro Otani, Josef Elster, Masaki Uchida and Satoshi Imura.

Meteorological data from ice-free areas in Yukidori Zawa, Langhovde and Kizahashi Hama, Skarvsnes, and Skallen on Sôya Coast, East Antarctica during January 2017–December 2018. *Polar Data Journal*. 2021, 5, p.1–10.

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1st submission

Editor Start Date: 11/3/2020

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Reviewer #1 (11/29/2020–12/09/2020)

Reviewer #2 (12/1/2020–12/11/2020)

Reviewer #1: Anonymous

This manuscript presents meteorological data obtained by the three automatic weather stations installed on ice-free area in Soya coast, east Antarctica. The presented data collected from January 2017 to December 2018 is worthwhile for not only terrestrial organisms research but also other research area such as Meteorology, Oceanography and Glaciology for the region studied. However, the current manuscript is inadequate in its description of settings of data recording in the data logger and quality control of collected data. Therefore, it is my recommendation that this manuscript needs major revisions to be published. I will give some suggestions in the following.

Major comments:

1. Most of the description in the manuscript was copied from Kudoh et al. (2015a, 2015b, 2019). The majority of reproductions in the manuscript from the related publication are not included in the journal's publication ethics section. However, I recommend authors to refer to the published papers and newly acquired data would be preferable to be given a DOI on ADS website to avoid repetition of very similar publications.

2. 4. Data Records: Time stamps in the published data (e.g., 10-min_data_Kizahashi2017J-2018D.csv) contain from 0:00 January 1, 2017 to 23:50 December 31, 2018. I understood that wind speed, wind direction and solar radiation are averaged for 10 minutes from each time stamp to the next one. For example, the data at 0:00 January 1, 2017 is averaged from 0:00 to 0:10. If the data is averaged from 10 minutes before to time stamp, the data at 0:00 is averaged from 23:50 on December 31, 2016 to 0:00 on January 1, 2017. If the program in the logger (CR1000) defines for data average with

the latter method, "10-min_data_Kizahashi2017J-2018D.csv" contains between 23:50 December 31, 2016 and 0:00 January 1, 2017, and misses between 23:50 December 31, 2018 and 0:00 January 1, 2019. The scanning interval used for average and how the mean value is calculated in the logger program (CR1000) must be described, as commented from the reviewer #3 in the Peer Review report of Kudoh et al. (2019) Polar Data Journal.

3. 5. Technical Validation: There is no description in terms of quality control of the presented data in "5. Technical Validation". Are the daily mean data in Fig. 2-4 evaluated for quality, such as noise removal? Even if noise has been removed from the data, or if no verification of any data has been done, the author should state in the manuscript what quality controls have been done and what the quality level of the published data is. It is important information for users to determine if a quality control is needed when they use the data.

Specific comments:

1. Line 29: Delete the comma immediately after "Langhovde"
2. Line 37: The period of data should be described because "these data" may be misunderstood as the data presented this manuscript which was already published in these references.
3. Line 45: Because Garmin GPS Map 62 has a measurement accuracy of ~10 m in horizontal direction, the estimated coordinates are limited to 0.01 minutes in latitude and longitude, considering the measurement error.
4. Line 46: An accuracy of vertical direction of the Garmin Map 62 is usually more than 10 m. The precise coordinates of AWSs should be measured by GNSS station with higher accuracy (<1 m) in the near future.
5. Line 46 and 48: The unit of elevation should be unified through the manuscript either meter above sea level (m a.s.l.) or ellipsoid height (m).
6. Line 54: Vaissala >> Vaisala
7. Line 61: The accuracy the >> The accuracy of the
8. Line 63: Delete space between "0" and "-".
9. Fig. 1: It would be clearer to show the annotations (a)-(d) (e.g., Fig. 1a-1d) on each figure.
10. Fig. 2-4: A picture showing the AWS system is useful information for readers. I suggest adding an image of each AWS at upper left of the Fig. 2-4.
11. Fig. 2-4: Should be added (a) to (c) on each figure as a comment on Fig. 1.
12. Line 245: Although the figure caption says the format of date in yy/mm/dd hh:mm, year, month, day and hour are described as yyyy/m/d h:mm in the table. These descriptions should be unified in the same manner. Horizontal axis label of daily temperature and solar radiations in the Fig. 2-4 should be also unified as well.
13. Line 245: "local time" is unclear for readers. Should be described in UTC.
14. Line 276: 2Kudoh >> 4Kudoh
15. Line 279: Add the period immediately after "(2019-03)".

16. Line 280: Delete the period immediately before "5Kudoh".

Reviewer #2: Anonymous

The manuscript summarizes the results of Automatic Weather Stations near Syowa station from January 2017 to December 2018. Because this paper is easy to understand for the observed data, I judge that this manuscript can be published as it is. However, I noticed that several points that should be revised. The author should revise these points if necessary.

1. Line 45, 49: I think that the order of longitude and latitude is normally used in In English. Please check the order the two terms.
2. Line 58: a plastic container → If the container is waterproof, this should add in the manuscript.
3. Line 59: It is better to write the fixed method of tripods at the observation sites. It is also better to add a photograph of the AWS at least one site.
4. Line 64, 247: $\mu\text{mol}/\text{m}^2/\text{s}$ → It is somewhat unclear that the last s is s-1 or not. It is better to write this as follows: $\mu\text{mol}/(\text{m}^2 \text{ s})$ or $\mu\text{mol m}^{-2} \text{ s}^{-1}$
5. Line 263: PI: Imura S. → PI:S. Imura ?
6. Line 280: .5Kudoh → 5Kudoh
7. Line 286: 1.Kudoh → 1Kudoh or Kudoh

All figures: It is better to use a and b for distinguishing the figures, NOT to use left nor right.

Figs.2, 3, 4: Labels of Wind speed (m/s) should be placed at the left side of the y axis. The position of Wind speed (m/s) is placed too below of the graph.

Authors Response:

Thank you for careful reading and kind comments of two reviewers. We checked all, and tried to revise our manuscript.
The followings are our revision points;

Response to reviewer #1;

Major comments:

1. Most of the description in the manuscript was copied from Kudoh et al. (2015a, 2015b, 2019). The majority of

reproductions in the manuscript from the related publication are not included in the journal's publication ethics section. However, I recommend authors to refer to the published papers and newly acquired data would be preferable to be given a DOI on ADS website to avoid repetition of very similar publications.

Answer:

3. Methods section were fully revised to avoid repetition of very similar our previous publications as suggested.

2. 4. Data Records: Time stamps in the published data (e.g., 10-min_data_Kizahashi2017J-2018D.csv) contain from 0:00 January 1, 2017 to 23:50 December 31, 2018. I understood that wind speed, wind direction and solar radiation are averaged for 10 minutes from each time stamp to the next one. For example, the data at 0:00 January 1, 2017 is averaged from 0:00 to 0:10. If the data is averaged from 10 minutes before to time stamp, the data at 0:00 is averaged from 23:50 on December 31, 2016 to 0:00 on January 1, 2017. If the program in the logger (CR1000) defines for 3data average with the latter method, "10-min_data_Kizahashi2017J-2018D.csv" contains between 23:50 December 31, 2016 and 0:00 January 1, 2017, and misses between 23:50 December 31, 2018 and 0:00 January 1, 2019. The scanning interval used for average and how the mean value is calculated in the logger program (CR1000) must be described, as commented from the reviewer #3 in the Peer Review report of Kudoh et al.(2019) Polar Data Journal.

Answer:

Thank you for your careful checking.

I added precise signal sampling of the data logger, recording periods, and fully revised in 4. Data Records section.

3. 5. Technical Validation: There is no description in terms of quality control of the presented data in "5. Technical Validation". Are the daily mean data in Fig. 2-4 evaluated for quality, such as noise removal? Even if noise has been removed from the data, or if no verification of any data has been done, the author should state in the manuscript what quality controls have been done and what the quality level of the published data is. It is important information for users to determine if a quality control is needed when they use the data.

Answer:

Thank you for your comments, I added "We found two points of over scaled data of the daily minimum temperature from Yukidori Zawa AWS. In this two cases, we recalculate the 1-hour and daily average temperature, using 10-min records. Then, daily minimum temperatures at the two erratic points were re-evaluated from the 10-min records, too. There were no erratic data from the other two AWSs during the present observation period, therefore, we presented directly downloaded data from these two AWSs without correction." in 5. Technical Validation.

Specific comments:

1. Line 29: Delete the comma immediately after "Langhovde"

Deleted and the sentence have been revised.

2. Line 37: The period of data should be described because "these data" may be misunderstood as the data presented this manuscript which was already published in these references.

Sentence have been revised.

3. Line 45: Because Garmin GPS Map 62 has a measurement accuracy of ~10 m in horizontal direction, the estimated coordinates are limited to 0.01 minutes in latitude and longitude, considering the measurement error.

Thank you. I changed as suggested.

4. Line 46: An accuracy of vertical direction of the Garmin Map 62 is usually more than 10 m. The precise coordinates of AWSs should be measured by GNSS station with higher accuracy (<1 m) in the near future.

Thank you for your kind suggestion, I will plan to measure the more precise position and altitude with the aid of geoscientists of the JARE, near future.

5. Line 46 and 48: The unit of elevation should be unified through the manuscript either meter above sea level (m a.s.l.) or ellipsoid height (m).

Revised

6. Line 54: Vaissala >> Vaisala

Sensors equipped our AWS had been listed in our previous reports, then I refer these to avoid repetition. And I removed this precise information of sensors in this section.

7. Line 61: The accuracy the >> The accuracy of the

Revised

8. Line 63: Delete space between "0" and "-".

Deleted

9. Fig. 1: It would be clearer to show the annotations (a)-(d) (e.g., Fig. 1a-1d) on each figure.

Revised

10. Fig. 2-4: A picture showing the AWS system is useful information for readers. I suggest adding an image of each AWS at upper left of the Fig. 2-4.

Added a photograph

11. Fig. 2-4: Should be added (a) to (c) on each figure as a comment on Fig. 1.

Revised

12. Line 245: Although the figure caption says the format of date in yy/mm/dd hh:mm, year, month, day and hour are described as yyyy/m/d h:mm in the table. These descriptions should be unified in the same manner. Horizontal axis label of daily temperature and solar radiations in the Fig. 2-4 should be also unified as well.

Thank you for your suggestion, I will ask the PDJ office about the format of the table, and try to be unified.

13. Line 245: "local time" is unclear for readers. Should be described in UTC.

I do not think local time is unclear for readers, sorry. I have two reasons to express our present report to be described in local time. Firstly, our previous reports had been described in local time. Present report, I should be keep the same time stamp manner for continuous data presentation. Second, parameters such as diel fluctuation of solar radiation, UV, PAR as well as air temperature can be easily imagine because of these are tended to take large values around noon.

14. Line 276: 2Kudoh >> 4Kudoh

Revised

15. Line 279: Add the period immediately after "(2019-03)".

Added

16. Line 280: Delete the period immediately before "5Kudoh".

Delated

Reponse to reviewer #2;

The manuscript summarizes the results of Automatic Weather Stations near Syowa station from January 2017 to December 2018. Because this paper is easy to understand for the observed data, I judge that this manuscript can be published as it is. However, I noticed that several points that should be revised. The author should revise these points if necessary.

Thank you for your comments. I fully revised as your suggestion, as follows;

1. Line 45, 49 I think that the order of longitude and latitude is normally used in In English. Please check the order the two terms.

The notation of latitude and longitude was re-listed in order of longitude and latitude.

2. Line 58 a plastic container → If the container is waterproof, this should add in the manuscript.

Added " a water resistant plastic container " to the description of the box that stores AWS battery loggers, etc.

3. Line 59 It is better to write the fixed method of tripods at the observation sites. It is also better to add a photograph of the AWS at least one site.

Added description of installation of tripods and the container.

4. Line 64, 247 $\mu\text{mol}/\text{m}^2/\text{s}$ → It is somewhat unclear that the last s is s-1 or not. It is better to write this as follows: $\mu\text{mol}/(\text{m}^2 \text{ s})$ or $\mu\text{mol m}^{-2} \text{ s}^{-1}$

Revised confusing unit as suggested.

5. Line 263 PI: Imura S. → PI:S. Imura ?

Line 280 .5Kudoh → 5Kudoh

Line 286 1.Kudoh → 1Kudoh or Kudoh

Thank you for the polite checking. Notation errors are fixed.

6. All figures It is better to use a and b for distinguishing the figures, NOT to use left nor right.

Figs.2, 3, 4 Labels of Wind speed (m/s) should be placed at the left side of the y axis. The position of Wind speed (m/s) is placed too below of the graph.

Thank you for pointing out the corrections to the figures. All figures and a table were revised.

2nd submission

Editor Start Date: 1/7/2021

Editor Stop Date: 2/1/2021

Editor Comments to the Author:

This data paper was created to publish and reuse valuable data.

In addition, in order to reuse the data, the data description is properly described.

The revised paper has been appropriately revised according to the opinions of the reviewers.

Editorial Office's note

Calculate checksum date: 2/10/2021

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