

The SUMup collaborative database: Surface mass balance, subsurface temperature and density measurements from the Greenland and Antarctic ice sheets

Baptiste Vandecrux¹, Charles Amory², Andreas P. Ahlstrøm¹, Pete D. Akers³, Mary Albert⁴, Richard B. Alley⁵, Laurent Arnaud², Ian Baker⁶, Roger Bales⁷, Carl Benson⁸, Jason E. Box¹, Christo Buizert⁹, David M. Chandler^{10, 11}, Charalampos Charalampidis¹, Clément Cherblanc^{12, 13}, Nicole Clerx¹⁴, William Colgan¹, Federico Covi¹⁵, Marissa Dattler¹⁶, Gilles Denis¹⁷, Chris Derksen¹⁸, Jack E. Dibb¹⁹, Minghu Ding²⁰, Olaf Eisen^{21, 22}, Dominik Fahrner¹, Robert Fausto¹, Vincent Favier², Francisco Fernandoy²³, Johannes Freitag²¹, Sebastian Gerland^{24, 21}, Joel Harper²⁵, Robert L. Hawley²⁶, Jasper Heuer¹, Regine Hock²⁷, Shugui Hou²⁸, Penelope How¹, Bryn Hubbard²⁹, Niel Humphrey³⁰, Yoshinori Iizuka³¹, Elisabeth Isaksson²⁴, Takao Kameda³², Nanna B. Karlsson¹, Kaoru Kawakami³¹, Helle Astrid Kjær¹³, Karl Kreutz³³, Peter Kuipers Munneke³⁴, Gabriel Lewis³⁵, Michael MacFerrin³⁶, Horst Machguth¹⁴, Olivier Magand³⁷, Kenneth D. Mankoff^{38, 39}, Joseph R. McConnell⁴⁰, Brooke Medley⁴¹, Heinrich Miller⁴², Olivia Miller⁴³, Elizabeth Morris⁴⁴, Ellen Mosley-Thompson⁴⁵, Robert Mulvaney¹⁵, Masashi Niwano⁴⁶, Erich Osterberg²⁶, Inès Otosaka⁴⁷, Ghislain Picard², Chris Polashenski^{48, 4}, Carleen Reijmer³⁴, Asa Rennermalm⁴⁹, Anja Rutishauser¹, Kirk M. Scanlan⁵⁰, Sebastian B. Simonsen⁵⁰, Paul, C.J.P. Smeets³⁴, Andrew Smith¹⁵, Anne Solgaard¹, Matthew Spencer⁵¹, Hans Christian Steen-Larsen⁵², C. Max Stevens^{53, 54}, Shin Sugiyama³¹, Jonas Svensson⁵⁵, Marco Tedesco⁵⁶, Elizabeth. R Thomas⁵⁷, Megan Thompson-Munson⁵⁸, Shun Tsutaki⁵⁹, Dirk van As¹, Michiel R. Van den Broeke³⁴, Maurice van Tiggelen³⁴, Yetang Wang⁶⁰, Frank Wilhelms^{21, 61}, Mai Winstrup⁵⁰, Jing Xiao⁴⁹, and Cunde Xiao⁶²

¹Geological Survey of Denmark and Greenland, Copenhagen, Denmark

²Université Grenoble Alpes, CNRS, Institut des Géosciences de l'Environnement (IGE), UMR 5001, Grenoble, France

³Discipline of Geography, School of Natural Sciences, Trinity College Dublin, Dublin, Ireland

⁴Thayer School of Engineering, Dartmouth, Hanover, NH, USA

⁵Department of Geosciences, and Earth and Environmental Systems Institute, Pennsylvania State University, University Park, PA USA

⁶Thayer School of Engineering, Dartmouth College, Hanover, NH, USA

⁷University of California, Merced, Merced, CA USA

⁸Geophysical Institute, University of Alaska Fairbanks, Fairbanks, Alaska, USA

⁹College of Earth Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR, USA

¹⁰NORCE Norwegian Research Centre and Bjerknes Centre for Climate Research, Bergen, Norway

¹¹Bristol Glaciology Centre, University of Bristol, Bristol, UK

¹²Danish Meteorological Institute, Denmark

¹³Niels Bohr Institute, University of Copenhagen, Denmark

¹⁴Department of Geosciences, University of Fribourg, Fribourg, Switzerland

¹⁵British Antarctic Survey, Cambridge, UK

¹⁶University of Maryland, College Park/ NASA Goddard Space Flight Center

¹⁷Imaqa Foundation, Brussels, Belgium

¹⁸Climate Research Division, Environment and Climate Change Canada

- ¹⁹University of New Hampshire, Durham, NH, USA
²⁰Chinese Academy of Meteorological Sciences, Beijing, China
²¹Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung
²²Universität Bremen
²³Universidad Andrés Bello, Viña del Mar, Chile
²⁴Norwegian Polar Institute, Tromsø, Norway
²⁵University of Montana
²⁶Department of Earth Sciences, Dartmouth College, Hanover, NH, USA
²⁷Department of Geosciences, University of Oslo
²⁸School of Oceanography, Shanghai Jiao Tong University, Shanghai, China
²⁹Aberystwyth University, Aberystwyth, UK
³⁰Department of Geology and Geophysics, University of Wyoming, Laramie, WY, USA
³¹Institute of Low Temperature Science, Hokkaido University
³²Snow and Ice Research Laboratory, Kitami Institute of Technology
³³Climate Change Institute, University of Maine, Orono, ME, USA
³⁴Institute for Marine and Atmospheric research, Utrecht, The Netherlands
³⁵Center for Western Weather and Water Extremes, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, CA, USA
³⁶Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado Boulder, Boulder, United States
³⁷Observatoire des Sciences de l'Univers de la Réunion, UR, CNRS, IRD, météo-France, Saint Denis, La Réunion, France
³⁸NASA Goddard Institute for Space Studies, New York, NY, 10025 USA
³⁹Autonomic Integra LLC, New York, NY, 10025 USA
⁴⁰Division of Hydrologic Sciences, Desert Research Institute, Reno, NV, USA
⁴¹NASA Goddard Space Flight Center, Earth Sciences Division, Greenbelt, MD, USA
⁴²Alfred Wegener Institut Helmholtz Zentrum für Polar und Meeresforschung, Bremerhaven, Germany
⁴³University of Utah, Salt Lake City, USA
⁴⁴Scott Polar Research Institute, University of Cambridge
⁴⁵Byrd Polar and Climate Research Center, Ohio State University, USA
⁴⁶Meteorological Research Institute, Japan Meteorological Agency, Tsukuba, Japan
⁴⁷Centre for Polar Observation and Modelling, Northumbria University
⁴⁸U.S. Army Cold Regions Research and Engineering Laboratory
⁴⁹Rutgers, The State University of New Jersey
⁵⁰Geodesy and Earth Observation, DTU-Space, Technical University of Denmark, Lyngby, Denmark
⁵¹Lake Superior State University, Sault Ste. Marie, MI, USA
⁵²Geophysical Institute, University of Bergen and Bjerknes Centre for Climate Research, Bergen, Norway
⁵³Earth System Science Interdisciplinary Center, University of Maryland, College Park, MD, USA
⁵⁴Cryospheric Sciences Laboratory, NASA Goddard Space Flight Center, Greenbelt, MD, USA
⁵⁵Finnish Meteorological Institute, Helsinki, Finland
⁵⁶Columbia University
⁵⁷British Antarctic Survey, Cambridge UK
⁵⁸University of Colorado, Boulder, Colorado, USA
⁵⁹National Institute of Polar Research, Tokyo, Japan
⁶⁰School of Geography and Environment, Shandong Normal University, Jinan 250014, China
⁶¹Georg-August-Universität Göttingen
⁶²Beijing Normal University, Beijing, China

Correspondence: B.Vandecrux (bav@geus.dk)

Abstract. The SUMup database is a compilation of surface mass balance (SMB), subsurface temperature and density measurements from the Greenland and Antarctic ice sheets available at <https://www.doi.org/10.18739/A2M61BR5M> (Vandecrux et al., 2024). This 2024 release contains 7483826 data points: 2857256 SMB measurements, 2727162 density measurements and 1899408 subsurface temperature measurements. This is respectively 1078716, 20749 and 1893938 additional observations
5 of SMB, density and temperature compared to the 2023 release. Since 2023, SUMup provides not only snow accumulation on ice sheets, like its predecessors, but all types of SMB measurements, including from ablation areas. Note that the accumulated SMB is given, not accumulation rates. The data files are provided in both CSV and NetCDF format and contain, for each measurement, the following metadata: latitude, longitude, elevation, timestamp, method, reference of the data source and, when applicable, the name of the measurement group it belongs to (core name for SMB, profile name for density, station name for
10 temperature). Data users are asked to cite all the original data sources that are being used. Issues about this release as well as suggestions of datasets to be added in next releases can be done on a [dedicated user forum](#). We also provide [example scripts to use the SUMup 2024 files](#) as well as [the compilation scripts used to build the database](#). SUMup is a community effort and help to compile and curate the database is welcome.

Contents

15	1 The SUMup project	5
	1.1 Background	5
	1.2 Terms of use	5
	1.3 Contributing to the Dataset	5
	1.4 Acknowledgement	5
20	2 Important notes for the 2024 release	6
3	3 List of datasets added to the 2024 release	7
	3.1 New surface mass balance data	7
	3.2 New density data	8
	3.3 New temperature data	8
25	4 The density data files	9
	4.1 NetCDF files	9
	4.2 CSV files	9
5	5 The SMB data files	10
	5.1 NetCDF files	10
30	5.2 CSV files	11
6	6 The temperature data files	12
	6.1 NetCDF files	12
	6.2 CSV files	13
7	7 Dataset overview	14
35	7.1 Density	14
	7.2 SMB	22
	7.3 Temperature	32
8	8 References	38

1 The SUMup project

40 1.1 Background

The SUMup database is a community effort to distribute easy-to-use in-situ data to improve surface mass balance modeling and remote sensing efforts, and it is a compilation of work from many individual researchers. It covers measurements of snow and firn density, subsurface temperatures, surface mass balance on the Greenland and Antarctic ice sheets and their peripheral glaciers. After being sponsored by NASA, and by the Scientific Committee on Antarctic Research (SCAR), it is now continued
45 by the Geological Survey of Denmark and Greenland until another group carries it forward. For questions regarding the dataset, please contact the current compiler, Baptiste Vandecrux (bav@geus.dk).

1.2 Terms of use

When using this dataset, please cite both the individual studies who provided the data (see the reference key given for each measurement and associated reference list) as well as the SUMup dataset itself:

50 Vandecrux, B., Amory, C., Ahlstrøm, A.P., Akers, P.D., Albert, M., Alley, R.B., Arnaud, L., Baker, I., Bales, R., Benson, C., Box, J.E., Buzert, C., Chandler, D.M., Charalampidis, C., Cherblanc, C., Clerx, N., Colgan, W., Covi, F., Dattler, M., Denis, G., Derksen, C., Dibb, J.E., Ding, M., Eisen, O., Fahrner, D., Fausto, R., Favier, V., Fernandoy, F., Freitag, J., Gerland, S., Harper, J., Hawley, R.L., Heuer, J., Hock, R., Hou, S., How, P., Hubbard, B., Humphrey, N., Iizuka, Y., Isaksson, E., Kameda, T., Karlsson, N.B., Kawakami, K., Kjær, H.A., Kreutz, K., Kuipers Munneke, P., Lewis, G., MacFerrin, M., Machguth, H.,
55 Magand, O., Mankoff, K.D., McConnell, J.R., Medley, B., Miller, H., Miller, O., Morris, E., Mosley-Thompson, E., Mulvaney, R., Niwano, M., Osterberg, E., Otosaka, I., Picard, G., Polashenski, C., Reijmer, C., Rennermalm, A., Rutishauser, A., Scanlan, K.M., Simonsen, S.B., Smeets, P.C., Smith, A., Solgaard, A., Spencer, M., Steen-Larsen, H.C., Stevens, C.M., Sugiyama, S., Svensson, J., Tedesco, M., Thomas, E.R., Thompson-Munson, M., Tsutaki, S., van As, D., Van den Broeke, M.R., van Tiggelen, M., Wang, Y., Wilhelms, F., Winstrup, M., Xiao, J., Xiao, C.: The SUMup collaborative database: Surface mass
60 balance, subsurface temperature and density measurements from the Greenland and Antarctic ice sheets (2024 release), Arctic Data Center, <https://www.doi.org/10.18739/A2M61BR5M>, 2024.

1.3 Contributing to the Dataset

If you would like to contribute to the dataset, reach out to Baptiste Vandecrux (bav@geus.dk) for more details.

1.4 Acknowledgement

65 The SUMup working group was previously supported by the NASA Cryospheric Sciences Program and the National Science Foundation and the SCAR AntClimNow Dataset Stewardship grant. Now the maintenance of this dataset is supported by the Programme for Monitoring of the Greenland ice sheet (PROMICE), which is supported by the Danish Ministry for Environment, Energy and Utilities.

We are also grateful to all the people that helped collecting these data. We here thank H., Anschütz, J.R., Banta, N., Bertler,
70 H., Conway, D., Divine, D., Dixon, A., Ekaykin, H., Fischer, R., Forster, M., Frezzotti, T., Fudge, S., Fujita, J., Gallet, B.,
Goodwin, K., Graeter, W., Graf, M., Hastings, A., Heilig, K., Jezek, K., Keegan, T.V., Khodzher, L., Koenig, J.Y., Lindsey-
Clark, P., Martinerie, P., Mayewski, H., Oerter, H., Oerter, A., Ohmura, M., Philippe, J.L., Roberts, E., Schlosser, B., Stenni,
K., Takahashi, P., Vallelonga, B., Vinther, D., Vladimirova and C., Vos who either declined co-authorship, failed to answer the
invitation or whose updated contact detail could not be found. We also thank L. Koenig, J.T.M. Lenaerts, L. Montgomery, C.
75 Miège, P. Zens, L. Lolk Hauge, who continued their career in the private sector and eventually our departed colleagues and
pioneers of the field: K. Steffen (2020), D. Wagenbach (2016), H.B. Clausen (2013).

Eventually, the SUMup database could not exist without all the institutions funding research, expeditions and monitoring
in Greenland and Antarctica, among which: the Belgian Federal Science Policy Office and its Research Programme on the
Antarctic, the Belgian Fund for Scientific Research, Canada's Natural Sciences and Engineering Research Council (NSERC),
80 China's National Key Research and Development Program, the National Natural Science Foundation of China and Chinese
Academy of Sciences, Denmark's Independent Research Fund, the Villum, Carlsberg and A. P. Møller Foundations, the Uni-
versity of Copenhagen and the Danish Ministry for Environment, Energy and Utilities, the European Research Council (ERC),
the European Space Agency, the French National Centre for Scientific Research and its Glacioclim Observatory, the Ger-
man Research Foundation and the Helmholtz Association of German Research Centres, Japan's Society for the Promotion
85 of Science, National Institute of Polar Research and Arctic Challenge for Sustainability, and Japan's Ministry of Education,
Culture, Sports, Science and Technology (MEXT), the Fondation Albert 2 de Monaco, the Netherland's Institute for Scientific
Research, Earth System Science Centre and Royal Academy of Sciences, Norway's University of Bergen and Trond Mohn
Foundation, Sweden's national nuclear waste management organisation (SKB) through its Greenland Analog Project (GAP),
the Swiss National Science Foundation, UK's Natural Environment Research Council, the U.S. National Science Fundation
90 (NSF), National Aeronautics and Space Administration (NASA), and U.S. army's Cold Regions Research and Engineering
Laboratory (CRREL), the Climate Change Consortium of Wales, the international consortiums such as Vostok, EUROCORE,
Law Dome TALDICE, GRIP, EastGRIP, NGRIP, GISP, GISP2 as well as all the organisations supporting these expeditions in
the field: CH2M HILL Polar Services, Institut polaire français Paul-Émile Victor, International Polar Foundation, UNAVCO,
the U.S. Ice Drilling Program, the US Air National Guard, Asiaq Greenland Survey, and many others.

95 2 Important notes for the 2024 release

All SMB observations are given as cumulative values in meters water equivalent. Users therefore need to always use
the SMB value in combination with the start_year and end_year or start_date and end_date. A yearly SMB
value given for year Y will be reported with start_year = end_year = Y and with start_date = end_date =
NaN. Subannual SMB values will be reported, for instance, with start_year = end_year = Y and start_date =
100 'YYYY-01-01', end_date = 'YYYY-02-01'.

To preserve all special characters in references and location names, all strings in the netCDF files have been saved as UTF-8 instead of the ASCII format used previously. To ensure that the strings are decoded properly, you can use the following code:

```
1 import xarray as xr
2 import numpy as np
105 3
4 path_to_sumup = '.'
5 # loading data
6 df_sumup = xr.open_dataset(path_to_sumup+' /SUMup_2024_SMB_greenland.nc',
7                             group='DATA')
110 8 # loading metadata
9 ds_meta = xr.open_dataset(path_to_sumup+' /SUMup_2024_SMB_greenland.nc',
10                           group='METADATA')
11
12 # small function to decode the string
115 13 decode_utf8 = np.vectorize(lambda x: x.decode('utf-8') if isinstance(x, bytes) else x)
14 # applying this function to all variables that have string as type
15 for v in ['name', 'reference', 'reference_short', 'method']:
16     ds_meta[v] = xr.DataArray(decode_utf8(ds_meta[v].values), dims=ds_meta[v].dims)
```

See example scripts to use the SUMup files here: <https://github.com/SUMup-database/SUMup-example-scripts>

120 3 List of datasets added to the 2024 release

3.1 New surface mass balance data

Greenland:

- Daily ablation data from the Leverett glacier Chandler et al. (2015, 2021)
- Daily ablation from at the Historical GC-Net AWS (Steffen et al., 1996, Vandecrux et al., 2023)
- Daily ablation from the IMAU AWS (Smeets et al., 2018)
- Continuous measurement of SWE from SnowFox instruments (Fausto, 2021)
- Accumulation from Operation Ice Bridge radar surveys from Koenig et al. (2016)
- Added historical ice cores from Crete and Milcent
- Re-added ACT10 radar profiles with original coordinates
- Re-added the PARCA cores from Mosley-Thompson et al. (2001) including three datation techniques
- Fixed issues inherited from previous releases

Antarctica:

125

- Added all data from Ant2k compilation (Thomas et al., 2017)
- Added all data from AntSMB compilation (Wang et al., 2021)
- Fixed coordinates and references in the compiled data
- Added monthly accumulation measurement from stake farm at the Amundsen-Scott South Pole station (South Pole Meteorology Office, 2024)

3.2 New density data

Greenland:

- GC-Net 2024 field work snow pit and firn cores (Vandecrux et al., 2023)
- Harper and Humphrey (2023) cores on EGIG line
- Rasmussen et al., (2023) densities at EastGRIP

Antarctica:

- Siple Dome 1996-1997 data
- RICE core densities (Winstrup et al., 2019)
- Densities compiled by Picard et al., (2022)
- South Pole ice core densities from Winski et al. (2019)
- GlacioClim-SAMBA densities for traverses between 2004-2024
- Brazilian ice cores: Taveres et al. (2020), Marques et al. (2014), Portella et al. (2023), Hammes et al. (2009), Schwanck et al. (2014, 2016), Marcher et al. (2022), Ferreira et al. (2024), Marquetto et al. (2020), Simoes et al. (2004a, 2004b), Gerhard et al. (2018)
- Ice cores from Dome C and, D47 and D57 from Verfaillie et al. (2012), Raynaud and Barnola (1985) and Arnaud et al. (1998)
- Fixed issues inherited from previous releases

3.3 New temperature data

Greenland:

130

135

- In 2023, data prepared for Vandecrux et al. (2024) were distributed as monthly averaged, 10 m temperatures. In this new release, all the data collected for Vandecrux et al. (2024) is distributed at all available depths and on daily averages.
- 2024 data for PROMICE and GC-Net stations (Fausto et al., 2021, How et al., 2022)
- 2024 data for the deep temperature string at Camp Century (Colgan et al., 2017, Vandecrux et al., 2021)
- 2023 and 2024 temperature data from Saito et al. (2024); Harper and Humphrey (2023, 2023)
- Snow temperature data from SIGMA-A station: Nishimura et al. (2023)

Antarctica: No temperature addition for 2024.

4.1 NetCDF files

All variables are packed in

- SUMup_2024_density_antarctica.nc
- SUMup_2024_density_greenland.nc

145 Due to different dimensionality, the DATA and METADATA variables are saved as two different groups in the NetCDF files
In python:

```

1 import xarray as xr
2 import numpy as np
3
4 path_to_SUMup_folder = "."
5 ds_density = xr.open_dataset(
6     path_to_SUMup_folder + 'SUMup_2024_density_greenland.nc',
7     group='DATA'
8 )
155 9 ds_meta = xr.open_dataset(
10     path_to_SUMup_folder + 'SUMup_2024_density_greenland.nc',
11     group='METADATA'
12 )
13 # small function to decode the string
160 14 decode_utf8 = np.vectorize(lambda x: x.decode('utf-8') if isinstance(x, bytes) else x)
15 # applying this function to all variables that have string as type
16 for v in ['name','reference','reference_short','method']:
17     ds_meta[v] = xr.DataArray(decode_utf8(ds_meta[v].values), dims=ds_meta[v].dims)
```

4.2 CSV files

165 The “DATA” variables are given in the following comma-delimited (CSV) files

- SUMup_2024_density_antarctica.csv
- SUMup_2024_density_greenland.csv

while the “METADATA” variables are given in the tab-delimited (TSV) files

- SUMup_2024_density_methods.tsv
- SUMup_2024_density_profile_names.tsv
- SUMup_2024_density_references.tsv

Table 1. Variables within the density NetCDF file

Variable	Long name	Unit	Description
DATA VARIABLES			
measurement_id	measurement_index	-	index of density measurement (unique for each observation)
timestamp	timestamp	days since 1900-01-01	date at which measurement <measurement_id> was measured
start_depth	start_depth_of_measurement	m	top depth of density measurement <measurement_id>
stop_depth	stop_depth_of_measurement	m	bottom depth of density measurement <measurement_id>
midpoint	midpoint_depth_of_measurement	m	midpoint depth of density measurement <measurement_id>
density	density	kg m ⁻³	measured density for measurement <measurement_id>
error	error	kg m ⁻³	Error associated with the density measurement <measurement_id>
latitude	latitude	degree North	latitude of measurement <measurement_id>
longitude	longitude	degree East	longitude of measurement <measurement_id>
elevation	elevation	m	elevation of measurement <measurement_id> (datum may vary)
profile_key	profile_key	-	profile key associated with measurement <measurement_id>
method_key	method_key	-	method key of measurement <measurement_id>
reference_key	reference_key	-	reference key of measurement <measurement_id>
METADATA VARIABLES			
profile	profile	-	name of the profile <profile_key>
reference	reference	-	full reference associated with <reference_key>
reference_short	reference_short	-	short reference associated with <reference_key>
method	method	-	method associated with <method_key>

5 The SMB data files

5.1 NetCDF files

All variables are packed in

- 175 – SUMup_2024_SMB_antarctica.nc
 – SUMup_2024_SMB_greenland.nc

Due to different dimensionality, the DATA and METADATA variables are saved as two different groups in the NetCDF files

In python:

```

1 import xarray as xr
180 2 import numpy as np
3
4 path_to_SUMup_folder = "./"
```

```

5 ds_SMB = xr.open_dataset(
6     path_to_SUMup_folder + 'SUMup_2024_SMB_greenland.nc',
7     group='DATA'
8 )
9 ds_meta = xr.open_dataset(
10    path_to_SUMup_folder + 'SUMup_2024_SMB_greenland.nc',
11    group='METADATA'
12 )
13 # small function to decode the string
14 decode_utf8 = np.vectorize(lambda x: x.decode('utf-8') if isinstance(x, bytes) else x)
15 # applying this function to all variables that have string as type
16 for v in ['name', 'reference', 'reference_short', 'method']:
17     ds_meta[v] = xr.DataArray(decode_utf8(ds_meta[v].values), dims=ds_meta[v].dims)

```

5.2 CSV files

The “DATA” variables are given in

- SUMup_2024_SMB_antarctica.csv
- SUMup_2024_SMB_greenland.csv

200 while the “METADATA” variables are given in the tab-delimited (TSV) files

- SUMup_2024_SMB_methods.tsv
- SUMup_2024_SMB_profile_names.tsv
- SUMup_2024_SMB_references.tsv

Table 2. Variables within the SMB NetCDF file

Variable	Long name	Unit	Description
DATA VARIABLES			
measurement_id	measurement_index	-	index of smb measurement (unique for each observation)
start_date	start_date_of_smb_measurement	days since 1900-01-01	start date of measurement <measurement_id> (can be an estimation)
end_date	end_date_of_smb_measurement	days since 1900-01-01	end date of measurement <measurement_id> (can be an estimation)
smb	surface_mass_balance	m w.e.	measured surface mass balance for measurement <measurement_id>
error	error	m w.e.	error associated with the SMB measurement <measurement_id>
latitude	latitude	degree North	latitude of measurement <measurement_id>
longitude	longitude	degree East	longitude of measurement <measurement_id>
elevation	elevation	m	elevation of measurement <measurement_id>
name_key	name_key	-	name key associated to measurement <measurement_id>(core name or location)
method_key	method_key	-	method key of measurement <measurement_id>
reference_key	reference_key	-	reference key of measurement <measurement_id>
METADATA VARIABLES			
name	name	-	name of the core or location associated with the key <name_key>
reference	reference	-	full reference corresponding to <reference_key>
reference_short	reference_short	-	short reference corresponding to <reference_key>
method	method	-	method corresponding to <method_key>

6 The temperature data files

205 6.1 NetCDF files

All variables are packed in

- SUMup_2024_temperature_antarctica.nc
- SUMup_2024_temperature_greenland.nc

Due to different dimensionality, the DATA and METADATA variables are saved as two different groups in the NetCDF files

210 In python:

```

1 import xarray as xr
2 import numpy as np
3

```

```

4 path_to_SUMup_folder = "./"
215 5 ds_temperature = xr.open_dataset(
6     path_to_SUMup_folder + 'SUMup_2024_temperature_greenland.nc',
7     group='DATA'
8 )
9 ds_meta = xr.open_dataset(
22010    path_to_SUMup_folder + 'SUMup_2024_temperature_greenland.nc',
11    group='METADATA'
12 )
13 # small function to decode the string
14 decode_utf8 = np.vectorize(lambda x: x.decode('utf-8') if isinstance(x, bytes) else x)
22515 # applying this function to all variables that have string as type
16 for v in ['name','reference','reference_short','method']:
17     ds_meta[v] = xr.DataArray(decode_utf8(ds_meta[v].values), dims=ds_meta[v].dims)

```

6.2 CSV files

The “DATA” variables are given in

- 230 – SUMup_2024_temperature_antarctica.csv
- SUMup_2024_temperature_greenland.csv

while the “METADATA” variables are given in the tab-delimited (TSV) files (because of commas being used in references)

- SUMup_2024_temperature_methods.tsv
- SUMup_2024_temperature_profile_names.tsv
- 235 – SUMup_2024_temperature_references.tsv

Table 3. Variables within the temperature NetCDF file

Variable	Long name	Unit	Description
DATA VARIABLES			
measurement_id	measurement_index	-	index of temperature measurement (unique for each observation)
timestamp	timestamp_of_temperature_measurement	days since 1900-01-01	start date of measurement <measurement_id> (can be an estimation)
temperature	subsurface_temperature	deg C	measured temperature for measurement <measurement_id>
depth	depth_of_subsurface_temperature	m	depth of temperature measurement <measurement_id>
error	error	deg C	error associated with the temperature measurement <measurement_id>
duration	duration	days	The number of days over which the measurement <measurement_id> was taken or averaged
latitude	latitude	deg North	latitude of measurement <measurement_id>
longitude	longitude	deg East	longitude of measurement <measurement_id>
elevation	elevation	m	elevation of measurement <measurement_id>
name_key	name_key	-	name key associated to measurement <measurement_id> (instrument name or location)
method_key	method_key	-	method key of measurement <measurement_id>
reference_key	reference_key	-	reference key of measurement <measurement_id>
METADATA VARIABLES			
name	name	-	name of the instrument or location associated with the key <name_key>
reference	reference	-	full reference corresponding to <reference_key>
reference_short	reference_short	-	short reference corresponding to <reference_key>
method	method	-	method corresponding to <method_key>

7 Dataset overview

7.1 Density

Table 4

reference_short	start_year	end_year	num_measurements
Alley (1987) as in Spencer et al. (2001)	1987	1987	109
Johnsen S. pers. comm. as in Spencer et al. (2001)	1990	1990	74
Adolph et al. (2014)	2007	2008	829
Alley et al. (1999)	1999	1999	1018

reference_short	start_year	end_year	num_measurements
Ambach 1970	1967	1967	19
BPRC 1993 in Jezek (2012)	1993	1993	214
Bader (1954) as in Spencer et al. (2001)	1954	1954	16
Baker et al. (2009)	2009	2009	782
Benson (1962 2010 2013)	1952	1955	7282
Bolzan and Strobel (1999a b c d e f g h i j k l m n o)	1987	1987	2016
Bolzan and Strobel (2001a b)	1987	1987	583
Chellman et al. (2009)	2003	2013	3828
Clausen H.B. pers. comm. as in Spencer et al. (2001)	1983	1983	413
Clausen et al. (1988) as in Spencer et al. (2001)	1988	1988	953
Clerx et al. (2022)	2021	2021	567
Colgan et al. (2018) Colgan (2021)	2017	2017	562
Cooper et al. (2018)	2016	2016	81
Dibb and Fahnestock (2004)	2000	2002	815
Dibb et al. (2007)	1997	1998	226
Dibb et al. (2007b)	2003	2004	681
Dibb et al. (2017)	1990	1996	482
Fain et al. (2009)	2006	2006	250
Fischer et al. (1995)	1990	1990	523
Fourteau (2019a b c)	1989	1989	202
Freitag et al. (2021)	2012	2012	3388
GEUS snow and firn data (2023)	1996	2024	3934
Gow (1973) as in Spencer et al. (2001)	1973	1973	20
Graeter et al. (2018)	2016	2016	756
Harper and Humphrey (2022)	2022	2022	566
Harper and Humphrey (2023)	2018	2023	1551
Harper et al. (2012)	2007	2009	784
Hastings et al. (2017)	2012	2012	134
Hawley et al. (2014)	2010	2011	677
Jülg (1939) as in Abermann et al. (2023)	1930	1931	211
Kameda et al. (1995)	1989	1989	635
Kawakami et al. (2023)	2021	2021	251338
Koenig et al. (2014)	2013	2013	170
Kovacs et al. (1969) as in Spencer et al. (2001)	1963	1963	113
Langway (1967) as in Spencer et al. (2001)	1965	1965	150
Lewis et al. (2019)	2017	2017	731
MacFerrin et al. (2019)	2016	2017	509

reference_short	start_year	end_year	num_measurements
MacFerrin et al. (2022)	2015	2017	4898
Machguth et al. (2016)	2012	2015	2081
Mayewski and Whitlow (2016)	1989	1990	170
Mayewski et al. (2016b)	1988	1988	119
Mayewski et al. (2016c)	1987	1987	59
Mayewski et al. (2016d)	1984	1984	270
Miller and Schwager (2000a b)	1995	1995	208545
Miller et al. (2018)	2015	2016	1019
Miège et al. (2013)	2010	2014	654
Morris and Wingham (2014)	2004	2011	62979
Mosley-Thompson et al. (2001)	1995	1998	1451
NGT: Wilhelms (1996)	1994	1994	995
Niwano et al. (2020)	2018	2018	104
Ohmura (1991 1992)	1990	1991	101
Otosaka et al. (2020)	2016	2016	104
Otosaka et al. (2020b)	2017	2017	70
Polashenski et al. (2015)	2013	2014	1709
Porter and Mosley-Thompson (2014)	2007	2007	242
Rasmussen et al. (2023)	2016	2018	168
Reed (1966)	1963	1963	297
Renaud et al. (1959)	1959	1959	148
Rennermalm et al. (2021)	2017	2019	2674
Sarah et al. (2018)	2015	2015	576
Schaller et al. (2016)	2015	2015	273857
Schaller et al. (2017)	2016	2016	861533
Sigl et al. (2013)	2011	2011	162
Sorge et al. (1935) as in Abermann et al. (2023)	1930	1931	123
Steen-Larsen et al. (2011)	2007	2007	143
Tedesco et al. (2019)	2010	2010	102
Trusel et al. (2018)	2015	2015	1830
Vallelonga et al. (2014)	1999	2012	234
Wilhelms et al. (2000a b c d)	1993	1994	278109
van der Veen et al. (2001)	1981	1987	3914

Table 5: Origins and temporal coverage of the density data in Antarctica

reference_short	start_year	end_year	num_measurements
Alley (1987) as in Spencer et al. (2001)	1986	1986	149
Akers et al. (2022)	2014	2014	97
Albert et al. (2007)	2004	2004	199
Alley (1980) as in Spencer et al. (2001)	1979	1979	50
Anschütz et al. (2007)	2003	2003	9849
Arnaud et al. (1998)	1989	1989	104
Cole et al. (2004)	2001	2001	4747
Conway et al. (2003)	1997	1997	160
Courville et al. (2007)	2003	2004	265
Cunde et al. (2008)	2005	2005	147
Doumani and Pirritt (1960) as in Spencer et al. (2001)	1959	1960	3525
Ethderidge and Wookey (1989) as in Spencer et al. (2001)	1987	1987	112
Fernandoy (2010a b c)	2002	2002	35
Ferreira et al. (2024)	2015	2015	15
Fourteau (2019a b c)	1991	1992	701
Fujiwara et al. (1968)	1969	1969	88
Gallet et al. (2011)	2009	2009	67
Gerhard et al. (2018)	1997	1997	25
Gerland et al. (1999)	1995	1995	51174
GlacioClim-SAMBA (2024)	2004	2024	11880
Gow (1968) as in Spencer et al. (2001)	1956	1956	143
Graf and Oerter (2006a b c d e f g h i j k l m n o p q r s t u v w x y z)	1990	1992	5301
Graf et al. (1988a b c d e f g h i j k l m n o p q)	1980	1990	1065
Graf et al. (1999a b c d e f g h i j k l m n o p)	1995	1995	2621
Graf et al. (2002a b c d e f g h i j k l m n o)	1995	2000	11223
Gregory et al. (2014) Albert (2015)	2005	2005	239
Hammes et al. (2009)	2004	2004	143
Hubbard et al. (2013)	2014	2015	84501
Isaksson and Karlén (1994) as in Spencer et al. (2001)	1989	1989	1361
Jones et al. (2014); Lamorey (2003)	1996	1997	482
Kreutz et al. (2011)	2006	2006	48764
Kusunoki and Suzuki (1978) as in Spencer et al. (2001)	1970	1978	334
Larue et al. (2021) Picard et al. (2022)	2012	2019	1311
Marcher et al. (2022)	2015	2015	45
Marques et al. (2014)	2004	2004	144

reference_short	start_year	end_year	num_measurements
Marquetto et al. (2020)	2015	2015	71
Mayewski et al. (1990) as in Spencer et al. (2001)	1984	1984	81
Mayewski et al. (1998)	1998	1998	60
Medley et al. (2013)	2010	2011	259
Minghu et al. (2011)	2008	2008	590
Montgomery et al. (2020)	2018	2018	381
Morgan et al. (1997) as in Spencer et al. (2001)	1988	1988	31
Morris et al. (2017)	2013	2014	27559
Oerter et al. (1999a b c d e f g h)	1997	1997	9560
Oerter et al. (2000a b c d e f g h i)	1997	1998	43291
Oerter et al. (2002)	2001	2001	98
Oerter et al. (2004)	1997	1997	1511
Oerter et al. (2008a b c d e f g h i j k l m n o p)	2005	2006	455
Portella et al. (2023)	2004	2004	77
Raynaud and Barnola (1985)	1981	1981	46
SEAT11: Brucker and Koenig (2011)	2011	2011	119
SIMBA: Lewis et al. (2007)	2007	2007	24
SPICE cores	2015	2015	222
Schaller et al. (2017)	2017	2017	248590
Schlosser et al. (2002)	1989	1989	452
Schwanck et al. (2014)	2004	2004	131
Schwanck et al. (2016)	2008	2008	283
Severinghaus et al. (2010)	2004	2004	45
Simoes et al. (2004a)	1995	1996	452
Simoes et al. (2004b)	1996	1996	31
Stevens et al. (2023)	2016	2016	273
Stuart and Heine (1961) as in Spencer et al. (2001)	1959	1960	1043
Sugiyama et al. (2012)	2007	2008	46
TalDIce ice core	1996	1996	121
Taveres et al. (2020)	2004	2004	117
US ITASE: Mayewski and Dixon (2013)	1999	2007	2048
Verfaillie et al. (2012)	2004	2009	1331
WAIS cores	2005	2005	195
Wagenbach (1994a b c d)	1990	1990	415
Watanabe et al. (1970)	1970	1971	296
Watanabe et al. (1997) as in Spencer et al. (2001)	1996	1996	697
Weinhart et al. (2021)	2016	2017	22

reference_short	start_year	end_year	num_measurements
Wever et al. (2022)	2016	2019	119
Wilhelms (2007a b)	2007	2007	75089
Wilhelms et al. (2007)	2007	2007	68955
Winski et al. (2019)	2015	2015	222
Winstrup et al. (2019); Winstrup (2019)	2013	2013	2711
pers. comm. T. Sowers 1994 as in Spencer et al. (2001)	1994	1994	39
pers. comm. T. Sowers 1996 as in Spencer et al. (2001)	1996	1996	306

Figure 1. Spatial distribution of the density measurements in Greenland (left) and Antarctica (right)



Figure 2. Composition of the density dataset in Greenland

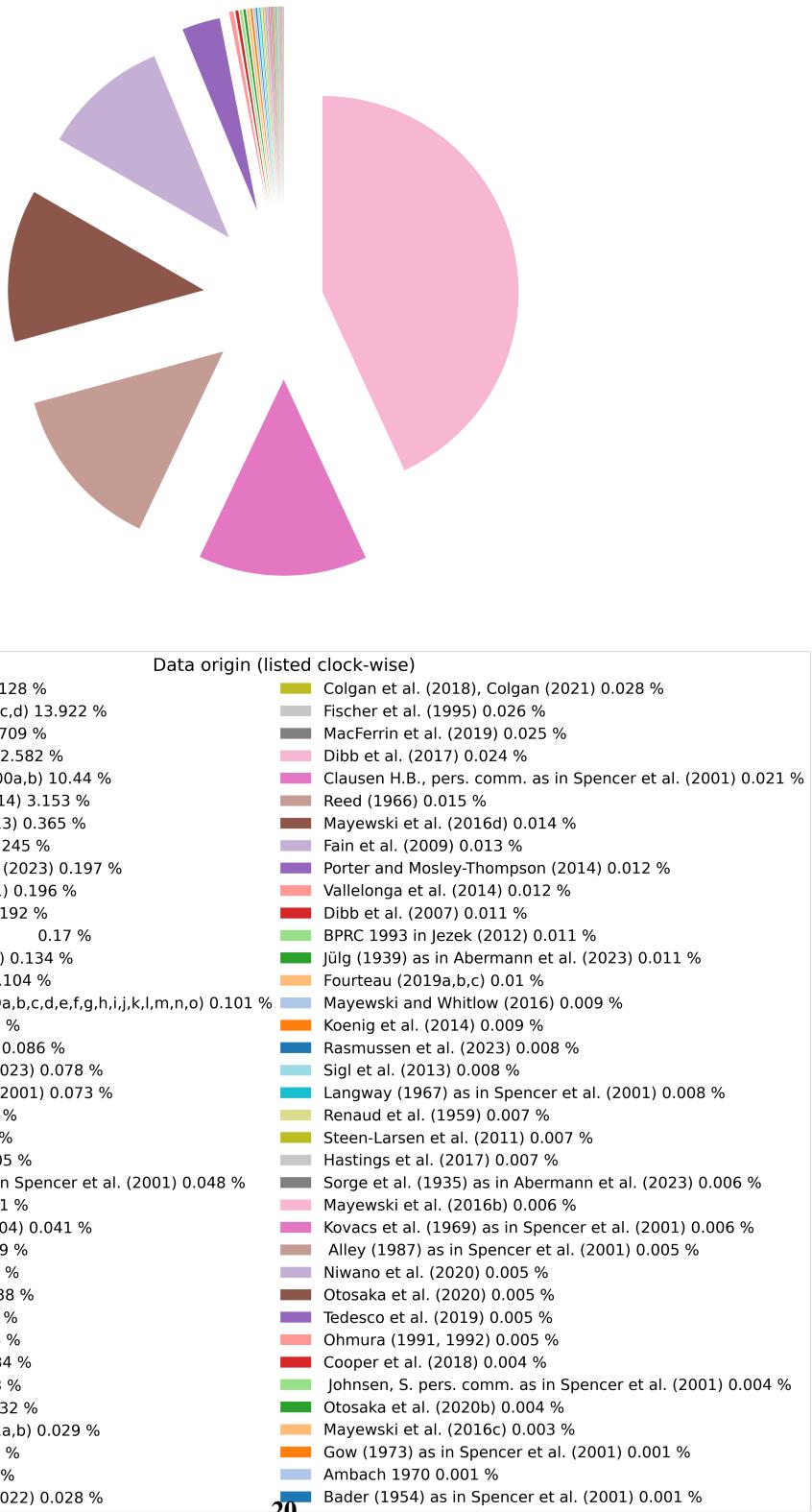


Figure 3. Composition of the density dataset in Antarctica



Data origin (listed clock-wise)

Schaller et al. (2017) 34.075 %	Gregory et al. (2014), Albert (2015) 0.033 %
Hubbard et al. (2013) 11.583 %	SPICE cores 0.03 %
Wilhelms (2007a,b) 10.293 %	Winski et al. (2019) 0.03 %
Wilhelms et al. (2007) 9.452 %	Albert et al. (2007) 0.027 %
Gerland et al. (1999) 7.015 %	WAIS cores 0.027 %
Kreutz et al. (2011) 6.684 %	Conway et al. (2003) 0.022 %
Oerter et al. (2000a,b,c,d,e,f,g,h,i) 5.934 %	Alley (1987) as in Spencer et al. (2001) 0.02 %
Morris et al. (2017) 3.778 %	Cunde et al. (2008) 0.02 %
GlacioClim-SAMBA (2024) 1.628 %	Marques et al. (2014) 0.02 %
Graf et al. (2002a,b,c,d,e,f,g,h,i,j,k,l,m,n,o) 1.538 %	Gow (1968) as in Spencer et al. (2001) 0.02 %
Anschütz et al. (2007) 1.35 %	Hammes et al. (2009) 0.02 %
Oerter et al. (1999a,b,c,d,e,f,g,h) 1.31 %	Schwanck et al. (2014) 0.018 %
Graf and Oerter (2006a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z) 0.727 %	TaIDIce ice core 0.017 %
Cole et al. (2004) 0.651 %	Wever et al. (2022) 0.016 %
Doumani and Pirritt (1960) as in Spencer et al. (2001) 0.483 %	SEAT11: Brucker and Koenig (2011) 0.016 %
Winstrup et al. (2019)	Tavares et al. (2020) 0.016 %
Winstrup (2019) 0.372 %	Ethridge and Wook (1989) as in Spencer et al. (2001) 0.015 %
Graf et al. (1999a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p) 0.359 %	Arnaud et al. (1998) 0.014 %
US ITASE: Mayewski and Dixon (2013) 0.281 %	Oerter et al. (2002) 0.013 %
Oerter et al. (2004) 0.207 %	Akers et al. (2022) 0.013 %
Isaksson and Karlén (1994) as in Spencer et al. (2001) 0.187 %	Fujiwara et al. (1968) 0.012 %
Verfaillie et al. (2012) 0.182 %	Mayewski et al. (1990) as in Spencer et al. (2001) 0.011 %
Larue et al. (2021) Picard et al. (2022) 0.18 %	Portella et al. (2023) 0.011 %
Graf et al. (1988a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q) 0.146 %	Marquette et al. (2020) 0.01 %
Stuart and Heine (1961) as in Spencer et al. (2001) 0.143 %	Gallet et al. (2011) 0.009 %
Fourteau (2019a,b,c) 0.096 %	Mayewski et al. (1998) 0.008 %
Watanae et al. (1997) as in Spencer et al. (2001) 0.096 %	Alley (1980) as in Spencer et al. (2001) 0.007 %
Minghu et al. (2011) 0.081 %	Raynaud and Barnola (1985) 0.006 %
Jones et al. (2014)	Sugiyama et al. (2012) 0.006 %
Lamorey (2003) 0.066 %	Marcher et al. (2022) 0.006 %
Oerter et al. (2008a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p) 0.062 %	Severinghaus et al. (2010) 0.006 %
Simoes et al. (2004a) 0.062 %	personal communication from T. Sowers 1994 as in Spencer et al. (2001) 0.005 %
Schlosser et al. (2002) 0.062 %	Fernandoy (2010a,b,c) 0.005 %
Wagenbach (1994a,b,c,d) 0.057 %	Morgan et al. (1997) as in Spencer et al. (2001) 0.004 %
Montgomery et al. (2020) 0.052 %	Simoes et al. (2004b) 0.004 %
Kusunoki and Suzuki (1978) as in Spencer et al. (2001) 0.046 %	Gerhard et al. (2018) 0.003 %
personal communication from T. Sowers 1996 as in Spencer et al. (2001) 0.042 %	SIMBA: Lewis et al. (2007) 0.003 %
Watanabe et al. (1970) 0.041 %	Weinhart et al. (2021) 0.003 %
Schwanck et al. (2016) 0.039 %	Ferreira et al. (2024) 0.002 %
Stevens et al. (2023) 0.037 %	
Courville et al. (2007) 0.036 %	
Medley et al. (2013) 0.036 %	

7.2 SMB

Table 6: Origins and temporal coverage of the SMB data in Greenland

reference_short	start_year	end_year	num_measurements
ACFEL 1963 as in Machguth et al. (2016)	1957	1957	7
Ahlmann 1941 as in Machguth et al. (2016)	1938	1940	36
Ahlstrøm 2003 as in Machguth et al. (2016)	1980	2000	85
Ahlstrøm 2007 as in Machguth et al. (2016)	1981	1990	422
Bales et al. (2009)	1741	2002	1031
Banta and McConnell (2007)	1701	2002	865
Bolzan and Strobel (1994 1999a b c d e f g 2001a b)	1940	1987	305
Box et al. (2013)	1742	2008	267
Braithwaite 1982 as in Machguth et al. (2016)	1979	1981	58
Braithwaite 1983 as in Machguth et al. (2016)	1981	1982	34
Braithwaite 1989 as in Machguth et al. (2016)	1981	1988	124
Burgress et al. (2010)	2003	2005	2
Bøggild 1995 as in Machguth et al. (2016)	1994	1995	27
Chandler et al. (2015 2021)	2012	2012	74
Clausen and Hammer (1988)	1763	1974	347
Clausen et al. (1988)	1001	1985	3405
Clausen 2001 as in Machguth et al. (2016)	1970	1995	13
Clement (1981a b c d) as in Machguth et al. (2016)	1977	1980	180
Clement (1982a b c) as in Machguth et al. (2016)	1980	1982	120
Clement (1983a b c d) as in Machguth et al. (2016)	1981	1983	130
Clement 1980 as in Machguth et al. (2016)	1979	1979	1
Davis 1967 as in Machguth et al. (2016)	1960	1964	16
Davis 1971 as in Machguth et al. (2016)	1955	1959	17
Dibb and Fahnestock (2004)	2003	2016	161
Fausto (2021)	2018	2020	249
Freitag et al. (2022a b c d)	1864	2012	457
Fristrup 1952 as in Machguth et al. (2016)	1948	1950	4
GC-Net (Steffen et al. 2023) as in Machguth et al. (2016)	1999	2009	16
GEUS unpublished	1977	2023	349
GRIP Hammer and Dahl-Jensen (1999)	1000	1989	439
Graeter et al. (1002)	1966	2015	268
Griffiths 1961 as in Machguth et al. (2016)	1954	1956	52
Hanna et al. (2006)	1957	2002	1281

reference_short	start_year	end_year	num_measurements
Hanna et al. (2011)	1773	2003	465
Hermann et al. (2018)	2013	2017	19
Historical GC-Net: Steffen et al. (1996 2001 2023); Vandecrux et al. (2023)	1996	2018	3713
Hynek 2014b as in Machguth et al. (2016)	2007	2013	93
Jung-Rothenhäusler 1995 as in Machguth et al. (2016)	1989	1994	53
Karlsson et al. (2016)	1311	2011	5558
Kawakami and Iizuka (2023)	1800	2020	221
Kjær et al. (2021)	2014	2018	29
Koenig et al. (2016)	1982	2012	844374
Kuhlman 1959 as in Machguth et al. (2016)	1957	1957	1
LaChapelle 1955 as in Machguth et al. (2016)	1952	1953	6
Lewis et al. (2017)	1712	2014	278157
Lewis et al. (2019)	1955	2016	869199
Loewe 1933 as in Machguth et al. (2016)	1929	1931	14
Machguth et al. (2016)	1982	2014	1104
Miller and Schwager (2000a b c d e)	871	1994	3245
Miège et al. (2013 2014a)	1992	2009	142975
Miège et al. (2013 2014b)	1762	2010	419
Montgomery et al. (2020)	2009	2017	286162
Mosley-Thompson et al. (2001)	1700	1998	1851
NEEM-08	1746	1999	254
Niwano et al. (2020)	2017	2018	4
Nobles 1960 as in Machguth et al. (2016)	1953	1954	17
Oerter 1995a as in Machguth et al. (2016)	1993	1994	23
Osman et al. (2021)	1000	2012	5507
PROMICE (2023)	2007	2023	17993
PROMICE (Fausto et al. 2023) as in Machguth et al. (2016)	2000	2020	242
Pert 1971 as in Machguth et al. (2016)	1963	1963	20
Podlech 2004 as in Machguth et al. (2016)	2001	2003	3
Rundle 1965 as in Machguth et al. (2016)	1952	1964	42
Schaller et al. (2016)	2011	2012	2
Schytt 1955 as in Machguth et al. (2016)	1953	1954	48
Smeets et al. (2018 2022)	2003	2015	1861
Thomsen 1984 as in Machguth et al. (2016)	1982	1983	1
Vinther et al. (2022)	1928	2010	83
White 1956 as in Machguth et al. (2016)	1953	1953	8
de Quervain 1925 as in Machguth et al. (2016)	1912	1912	5

reference_short	start_year	end_year	num_measurements
von Drygalski 1897 as in Machguth et al. (2016)	1892	1893	60

Table 7: Origins and temporal coverage of the SMB data in Antarctica

reference_short	start_year	end_year	num_measurements
Agosta et al. 2011 as in Wang et al. (2021)	2004	2010	91
Anschutz et al. 2009 as in Wang et al. (2021)	1815	2007	5
Anschutz et al. 2011 as in Wang et al. (2021)	1815	2008	13
Anschütz et al. (2007a b c d e f)	1966	2003	174
Aristarain et al. 1982 as in Wang et al. (2021)	1955	1978	1
Aristarain et al. 1987 as in Wang et al. (2021)	1955	1981	17
Aristarain et al. 2004 as in Thomas et al. (2017)	1832	1997	166
Baeza et al. 1996 as in Wang et al. (2021)	1970	1994	1
Banta et al. (2008)	1521	2004	714
Bertler et al. 2018. as in Thomas et al. (2017)	-45	2010	2056
Bishop and Walton 1981 as in Wang et al. (2021)	1969	1980	4
Bliss et al 2011 as in Wang et al. (2021)	2002	2011	164
Boutron and Lorian 1977; Mulvaney and Wolff 1994 as in Wang et al. (2021)	1955	1972	11
Brecher 1967 as in Wang et al. (2021)	1963	1966	6
Brunk 1986 as in Wang et al. (2021)	1966	1985	1
Budd 1963 as in Wang et al. (2021)	1957	1962	1
Budd 1982 as in Wang et al. (2021)	1962	1970	8
Bull 1971; Crary et al. 1962 as in Wang et al. (2021)	1957	1960	7
Clausen et al. 1979 as in Wang et al. (2021)	1955	1977	69
Cole-Dai et al. 2000 as in Wang et al. (2021)	1815	1987	2
Dattler et al. 2019 as in Wang et al. (2021)	1980	2017	175373
Ding et al. 2011 as in Wang et al. (2021)	1998	2009	7
Ding et al. 2017 as in Wang et al. (2021)	1709	2001	293
Dome-F Coring Group 1998 as in Wang et al. (2021)	1966	1985	1
Eicken 1994 as in Wang et al. (2021)	1973	1990	2
Ekaykin et al. 2002 as in Wang et al. (2021)	1941	1999	9
Ekaykin et al. 2014 as in Thomas et al. (2017)	1774	1999	225
Ekaykin et al. 2016 as in Thomas et al. (2017)	1640	1988	349
Ekaykin et al. 2017 as in Wang et al. (2021)	1254	2009	4
Fernandoy et al. (2010a b c d)	1935	2006	247
Fernandoy et al. 2010 as in Wang et al. (2021)	1960	2006	69
Ferris et al. (2011)	1800	2003	204

reference_short	start_year	end_year	num_measurements
Frezzotti et al. 2004 as in Wang et al. (2021)	1816	2002	41
Frezzotti et al. 2004; 2007 as in Thomas et al. (2017)	1777	2004	228
Frezzotti et al. 2004; 2013 as in Wang et al. (2021)	1670	2003	334
Frezzotti et al. 2004; 2014 as in Thomas et al. (2017)	1854	2004	151
Frezzotti et al. 2005 as in Wang et al. (2021)	1966	2002	10
Frezzotti et al. 2007 as in Wang et al. (2021)	1816	2006	1719
Frezzotti et al. 2013 as in Thomas et al. (2017)	1745	2003	392
Fudge et al. 2016 as in Thomas et al. (2017)	-51	2005	2057
Fudge et al. 2016 as in Wang et al. (2021)	1000	2006	1007
Fujita et al. 2011 as in Wang et al. (2021)	1964	2008	6
Fujiwara and Endo 1971 as in Wang et al. (2021)	1968	1975	36
Giovinetto 1960 as in Wang et al. (2021)	1958	1962	1
Glacioclim-BELARE as in Wang et al. (2021)	2009	2012	59
Goodwin et al. 1988; Jones et al. 1985 as in Wang et al. (2021)	1980	1985	5
Goodwin et al. 1994 as in Wang et al. (2021)	1975	1992	3
Goodwin et al. 2016 as in Thomas et al. (2017)	1900	2009	110
Goodwin 1988 as in Wang et al. (2021)	1973	1986	391
Goodwin 1995 as in Wang et al. (2021)	1941	1992	52
Gow 1972 as in Wang et al. (2021)	1655	1970	2
Graf and Oerter (2006a b c d e f g h i j k l m n o p q r s t u v w x y z)	1936	1990	397
Graf et al. (1988a b c d e f g h i j k l m n o p q)	1461	1985	565
Graf et al. (1999a b c d e f g h i j k l m n o p)	1946	1994	454
Graf et al. 1994 as in Wang et al. (2021)	1962	1989	7
Graf et al. 2002 as in Thomas et al. (2017)	1299	2010	712
Hammer et al. 1994 as in Wang et al. (2021)	1259	1968	1
Higham et al. 1997 as in Wang et al. (2021)	1983	1995	527
Hoffmann et al. 2020 as in Wang et al. (2021)	1973	2014	183
Hofstede et al. 2004 as in Wang et al. (2021)	1171	2001	3
Holmlund et al. 2000 as in Wang et al. (2021)	1955	1998	2
Hou et al 2007 as in Wang et al. (2021)	1966	2004	1
Igarashi et al. 2011 as in Wang et al. (2021)	1994	2001	1
Isaksson and Karlén 1994 as in Wang et al. (2021)	1955	1988	3
Isaksson et al. 1996 as in Wang et al. (2021)	1865	1991	129
Isaksson et al. 1999 as in Thomas et al. (2017)	1956	1996	41
Isaksson et al. 1999 as in Wang et al. (2021)	1965	1996	85
Jouzel et al. 1983 as in Wang et al. (2021)	1930	1978	1
Kaczmarska et al. 2004 as in Thomas et al. (2017)	1737	1999	263

reference_short	start_year	end_year	num_measurements
Kameda et al. 2008 as in Wang et al. (2021)	1995	2006	1
Kameda et al. 2008; Motoyama et al. 2016 as in Wang et al. (2021)	1985	2014	25
Kamiyama et al 1989 as in Wang et al. (2021)	1966	1985	1
Karlöf et al. 2000 as in Wang et al. (2021)	1815	1997	1
Karlöf et al. 2005 as in Wang et al. (2021)	1955	2000	10
Kaspari et al. 2004 as in Wang et al. (2021)	1716	2001	397
Khodzher et al. 2014 as in Wang et al. (2021)	2006	2010	13
Koide et al. 1979 as in Wang et al. (2021)	1950	1976	1
Konrad et al. (2019)	1985	2014	61334
Kreutz et al. 2000 as in Wang et al. (2021)	1964	1994	3
Langway et al. 1994 as in Wang et al. (2021)	628	1989	1
Legrand and Delmas 1985 as in Wang et al. (2021)	1959	1969	2
Lorius et al. 1968 as in Wang et al. (2021)	1955	1969	5
Magand et al. 2004 as in Wang et al. (2021)	1965	2001	1
Magand et al. 2004; Frezzotti et al. 2007 as in Wang et al. (2021)	1965	2001	2
Magand et al. 2005; Frezzotti et al. 2007 as in Wang et al. (2021)	1965	2001	1
Magand et al. 2007 as in Wang et al. (2021)	1965	2001	14
Mayewski and Dixon 2013 as in Thomas et al. (2017)	1888	2000	113
Mayewski and Dixon 2013 as in Wang et al. (2021)	1637	2001	331
Mayewski and Legrand 1990 as in Wang et al. (2021)	0	1984	1
McConnell et al. 1997 as in Wang et al. (2021)	1988	1995	1
McCrae 1984 as in Wang et al. (2021)	1970	1984	25
Medley et al. (2013)	1800	2010	448
Medley et al. 2014 as in Wang et al. (2021)	1980	2009	6616
Melvold et al. 1998 as in Wang et al. (2021)	1965	1998	8
Melvold 1999 as in Wang et al. (2021)	1976	1993	5
Meyerson et al. 2002 as in Wang et al. (2021)	1430	1989	560
Moore et al. 1991 as in Wang et al. (2021)	1259	1984	4
Morris et al. (2017)	1985	2013	21
Mosley-Thompson et al. 1999 as in Thomas et al. (2017)	1801	1991	191
Mosley-Thompson et al. 1999 as in Wang et al. (2021)	1801	1997	428
Mosley-Thompson et al. 1999; Giovinetto et al. 1966; Picciotto et al. 1964 as in Wang et al. (2021)	1958	1964	1
Mosley-Thompson et al. 1995 as in Wang et al. (2021)	1955	1985	24
Mosley-Thompson et al. 1995; Lazzara et al. 2012 as in Wang et al. (2021)	1985	2014	23
Mosley-Thompson et al. 2001 as in Wang et al. (2021)	1955	1994	20
Motoyama et al. (2015) Wang et al. (2015 2021) as in Wang et al. (2021)	1979	2013	504
Mulvaney and Wolff 1993 as in Wang et al. (2021)	1962	1982	2

reference_short	start_year	end_year	num_measurements
Mulvaney and Wolff 1993; Mulvaney et al. 1990 as in Wang et al. (2021)	1964	1987	1
Mulvaney et al. (2002)	1000	1994	995
Mumford and Peel 1982 as in Wang et al. (2021)	1964	1974	1
My et al. 2012; Roberts et al. 2015 as in Thomas et al. (2017)	-22	2010	2033
Neethling 1970 as in Wang et al. (2021)	1963	1967	1
Nijampurkar et al. 1993 as in Wang et al. (2021)	1963	1993	2
Nishio et al. 2002 as in Thomas et al. (2017)	1832	1999	168
Oerter H. 2008 as in Wang et al. (2021)	1964	2005	105
Oerter et al. (2000)	1025	1996	5437
Oerter et al. (2008a b c d e f g h i j k l m n o p)	1990	2005	204
Oerter et al. 1999 as in Thomas et al. (2017)	1895	1996	838
Oerter et al. 1999 as in Wang et al. (2021)	1801	1997	367
Oerter et al. 2000 as in Thomas et al. (2017)	1801	1997	391
Oerter et al. 2000 as in Wang et al. (2021)	1801	1997	1
Oerter et al. 2004 as in Wang et al. (2021)	0	0	2
Orheim et al. 1986 as in Wang et al. (2021)	1965	1976	5
Palais et al. 1982 as in Wang et al. (2021)	1955	1985	2
Pasteur and Mulvaney 2000 as in Thomas et al. (2017)	1949	1991	43
Peel and Clausen 1982 as in Wang et al. (2021)	1954	1976	14
Peel and Davison. 1988 as in Wang et al. (2021)	1964	1986	2
Petit et al. 1982 as in Wang et al. (2021)	1955	1979	2
Pettre et al. 1986 as in Wang et al. (2021)	1955	1983	21
Pettre et al. 1986; Petit et al. 1982 as in Wang et al. (2021)	1955	1983	2
Philippe et al. 2016 as in Thomas et al. (2017)	1744	2010	267
Picciotto et al . 1964 as in Wang et al. (2021)	1955	1963	1
Picciotto et al. 1968 as in Wang et al. (2021)	1955	1968	73
Potter et al. 1984 as in Wang et al. (2021)	1965	1976	19
Pourchet et al. 1983 as in Wang et al. (2021)	1955	1977	12
Pourchet et al. 1997 as in Wang et al. (2021)	1955	1990	6
Pourchet et al. 2003 as in Wang et al. (2021)	1955	2000	6
Reinwarth et al 1982 as in Wang et al. (2021)	1960	1980	1
Ren and Qin 1999 as in Wang et al. (2021)	1942	1992	51
Ren et al. 1995 as in Wang et al. (2021)	1970	1988	3
Ren et al. 2010 as in Wang et al. (2021)	1963	1999	1
Reusch et al. 1999 as in Wang et al. (2021)	1939	1993	55
Rotscky et al. 2007ab as in Wang et al. (2021)	1816	1997	9
Rott et al. 1998 as in Wang et al. (2021)	1980	1996	4

reference_short	start_year	end_year	num_measurements
SEAT10 et al. (2013)	1966	2010	198
Schlosser et al. (2002)	1975	1988	14
Schlosser et al. (2002b)	1955	1997	43
Schlosser et al. 1999 as in Thomas et al. (2017)	1892	1981	90
Schlosser et al. 2012 as in Wang et al. (2021)	1981	2009	100
Schlosser et al. 2014 as in Wang et al. (2021)	1991	2009	52
Schwander and Stauffer 1984 as in Wang et al. (2021)	1800	1983	1
Sinisalo et al. 2003 as in Wang et al. (2021)	1988	2002	26
Sinisalo et al. 2013 as in Wang et al. (2021)	2009	2012	8
Skvarca et al. 2004 as in Wang et al. (2021)	2001	2010	1
Sommer et al. 2000 as in Wang et al. (2021)	1965	1997	1
South Pole Meteorology Office (2024)	1960	2023	585
Spikes et al. (2005)	1815	2000	59768
Stenni et al. 1999 as in Wang et al. (2021)	1937	1992	2
Stenni et al. 2000 as in Thomas et al. (2017)	1770	1992	223
Stenni et al. 2000 as in Wang et al. (2021)	1297	2010	714
Stenni et al. 2002 as in Wang et al. (2021)	0	1996	4
Stuart 1961; Stuart and Heine 1961 as in Wang et al. (2021)	1951	1960	17
Takahashi et al. 1994 as in Wang et al. (2021)	1955	1988	9
Takahashi et al. 2009 as in Wang et al. (2021)	1965	2002	1
Thomas et al. 1984 as in Wang et al. (2021)	1971	1974	2
Thomas et al. 2008 as in Thomas et al. (2017)	1856	2006	151
Thomas et al. 2015 as in Thomas et al. (2017)	1703	2010	607
Thompson et al. 1994 as in Thomas et al. (2017)	1840	1989	150
US-ITASE et al. (2013)	1430	2002	4336
Urbini et al. 2008 as in Wang et al. (2021)	1965	1998	1
Van Ommen and Morgan 2010 as in Wang et al. (2021)	1966	2005	1
Van den Broeke et al. 1999 as in Wang et al. (2021)	1955	1997	13
Vaughan et al. 1999; Venteris and Whillans 1998 as in Wang et al. (2021)	1955	2009	153
Verfaillie et al. (2012)	1799	2009	20841
Vladimirova et al. 2014 as in Thomas et al. (2017)	1757	1981	154
Wagenbach et al. (1994a b)	1962	1989	48
Wang et al. (2021) as in Wang et al. (2021)	1979	2013	1
Wang et al. 2013 as in Wang et al. (2021)	1963	2009	2
Wang et al. 2015; Motoyama et al. 2015 as in Wang et al. (2021)	1971	2014	11145
Wang et al. 2016; Ding et al. 2011 as in Wang et al. (2021)	1994	2011	72
Wang et al. 2016 as in Wang et al. (2021)	1999	2011	509

reference_short	start_year	end_year	num_measurements
Wen et al. 2006 as in Wang et al. (2021)	1942	1996	55
Winski et al. 2019 as in Wang et al. (2021)	-7503	2014	9518
Winstrup et al. 2019 as in Wang et al. (2021)	1965	2012	1
Wolff and Suttie 1994 as in Wang et al. (2021)	1954	1964	1
Xiao et al. 2004 as in Thomas et al. (2017)	1670	2003	334
Yokohama 1975 as in Wang et al. (2021)	1969	1974	8
Young et al. 1982 as in Wang et al. (2021)	0	0	56
Young et al. 1982; Vinogradov and Lorius 1971 as in Wang et al. (2021)	1955	1969	10
Zanolini et al. 1985 as in Wang et al. (2021)	1815	1980	1

Figure 4. Spatial distribution of the SMB measurements in Greenland (left) and Antarctica (right)

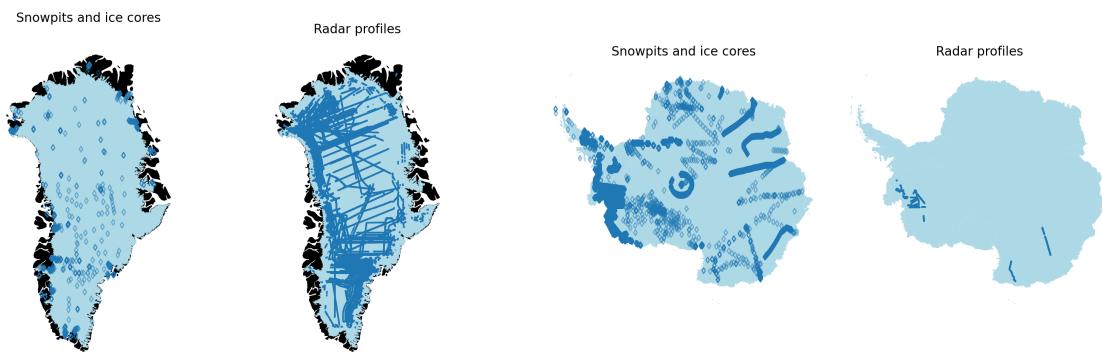
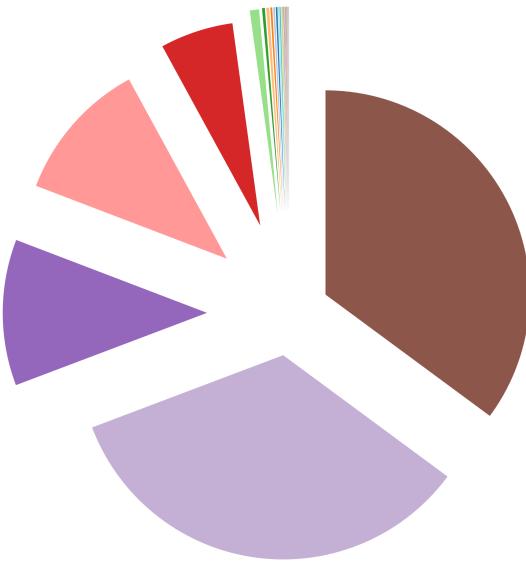


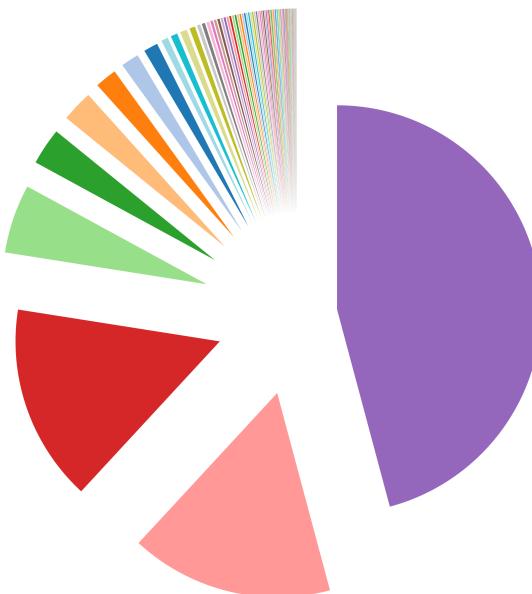
Figure 5. Composition of the SMB dataset in Greenland



Data origin (listed clock-wise)

Lewis et al. (2019)	35.124 %
Koenig et al. (2016)	34.121 %
Montgomery et al. (2020)	11.564 %
Lewis et al. (2017)	11.24 %
Miège et al. (2013, 2014a)	5.778 %
PROMICE (2023)	0.727 %
Karlsson et al. (2016)	0.225 %
Osman et al. (2021)	0.223 %
Historical GC-Net: Steffen et al. (1996, 2001, 2023)	0.15 %
Vandecrux et al. (2023)	0.15 %
Clausen et al. (1988)	0.138 %
Miller and Schwager (2000a,b,c,d,e)	0.131 %
Smeets et al. (2018, 2022)	0.075 %
Mosley-Thompson et al. (2001)	0.075 %
Hanna et al. (2006)	0.052 %
Machguth et al. (2016)	0.045 %
Bales et al. (2009)	0.042 %
Banta and McConnell (2007)	0.035 %
Hanna et al. (2011)	0.019 %
Freitag et al. (2022a,b,c,d)	0.018 %
GRIP, Hammer and Dahl-Jensen (1999)	0.018 %
Ahlstrøm, 2007 as in Machguth et al. (2016)	0.017 %
Miège et al. (2013, 2014b)	0.017 %
GEUS unpublished	0.014 %
Clausen and Hammer (1988)	0.014 %
Bolzan and Strobel (1994, 1999a,b,c,d,e,f,g, 2001a,b)	0.012 %
Graeter et al. (1002)	0.011 %
Box et al. (2013)	0.011 %
NEEM-08	0.01 %
Fausto (2021)	0.01 %
PROMICE (Fausto et al., 2023) as in Machguth et al. (2016)	0.01 %
Kawakami and Iizuka (2023)	0.009 %
Clement (1981a,b,c,d) as in Machguth et al. (2016)	0.007 %
Dibb and Fahnestock (2004)	0.007 %
Clement (1983a,b,c,d) as in Machguth et al. (2016)	0.005 %
Braithwaite, 1989 as in Machguth et al. (2016)	0.005 %
Clement (1982a,b,c) as in Machguth et al. (2016)	0.005 %
Hynek, 2014b as in Machguth et al. (2016)	0.004 %
Ahlstrøm, 2003 as in Machguth et al. (2016)	0.003 %
Vinther et al. (2022)	0.003 %
Chandler et al. (2015, 2021)	0.003 %
von Drygalski, 1897 as in Machguth et al. (2016)	0.002 %
Braithwaite, 1982 as in Machguth et al. (2016)	0.002 %
Jung-Rothenhäusler, 1995 as in Machguth et al. (2016)	0.002 %
Griffiths, 1961 as in Machguth et al. (2016)	0.002 %
Schytt, 1955 as in Machguth et al. (2016)	0.002 %
Rundle, 1965 as in Machguth et al. (2016)	0.002 %
Ahlmann, 1941 as in Machguth et al. (2016)	0.001 %
Braithwaite, 1983 as in Machguth et al. (2016)	0.001 %
Kjær et al. (2021)	0.001 %
Bøggild, 1995 as in Machguth et al. (2016)	0.001 %
Oerter, 1995a as in Machguth et al. (2016)	0.001 %
Pert, 1971 as in Machguth et al. (2016)	0.001 %
Hermann et al. (2018)	0.001 %
Davis, 1971 as in Machguth et al. (2016)	0.001 %
Nobles, 1960 as in Machguth et al. (2016)	0.001 %
GC-Net (Steffen et al., 2023) as in Machguth et al. (2016)	0.001 %
Davis, 1967 as in Machguth et al. (2016)	0.001 %
Loewe, 1933 as in Machguth et al. (2016)	0.001 %
Clausen, 2001 as in Machguth et al. (2016)	0.001 %
White, 1956 as in Machguth et al. (2016)	0.0 %
ACFEL, 1963 as in Machguth et al. (2016)	0.0 %
LaChapelle, 1955 as in Machguth et al. (2016)	0.0 %
de Quervain, 1925 as in Machguth et al. (2016)	0.0 %
Fristrup, 1952 as in Machguth et al. (2016)	0.0 %
Niwano et al. (2020)	0.0 %
Podlech, 2004 as in Machguth et al. (2016)	0.0 %
Schaller et al. (2016)	0.0 %
Burgress et al. (2010)	0.0 %
Thomsen, 1984 as in Machguth et al. (2016)	0.0 %
Kuhlman, 1959 as in Machguth et al. (2016)	0.0 %
Clement, 1980 as in Machguth et al. (2016)	0.0 %

Figure 6. Composition of the SMB dataset in Antarctica



Data origin (listed clock-wise)

Dattler et al., 2019 as in Wang et al. (2021) 45.839 %	Aristarain et al., 1987 as in Wang et al. (2021) 0.004 %
Konrad et al. (2019) 16.032 %	Magand et al., 2007 as in Wang et al. (2021) 0.004 %
Spikes et al. (2005) 15.622 %	Peel and Clausen, 1982 as in Wang et al. (2021) 0.004 %
Verfaillie et al. (2012) 5.447 %	Schlosser et al. (2002) 0.004 %
Wang et al., 2015	Khodzher et al., 2014 as in Wang et al. (2021) 0.003 %
Motoyama et al., 2015 as in Wang et al. (2021) 2.913 %	Van den Broeke et al., 1999 as in Wang et al. (2021) 0.003 %
Winski et al., 2019 as in Wang et al. (2021) 2.488 %	Anschutz et al., 2011 as in Wang et al. (2021) 0.003 %
Medley et al. 2014 as in Wang et al. (2021) 1.729 %	Pourchet et al., 1983 as in Wang et al. (2021) 0.003 %
Oerter et al. (2000) 1.421 %	Boutron and Loria, 1977
US-ITASE et al. (2013) 1.133 %	Mulvaney and Wolff, 1994 as in Wang et al. (2021) 0.003 %
Fudge et al., 2016 as in Thomas et al. (2017) 0.538 %	Frezzotti et al., 2005 as in Wang et al. (2021) 0.003 %
Bertler et al., 2018. as in Thomas et al. (2017) 0.537 %	Young et al., 1982
My et al., 2012	Vinogradov and Loria, 1971 as in Wang et al. (2021) 0.003 %
Roberts et al., 2015 as in Thomas et al. (2017) 0.531 %	Karlöf et al., 2005 as in Wang et al. (2021) 0.003 %
Frezzotti et al., 2007 as in Wang et al. (2021) 0.449 %	Takahashi et al. 1994 as in Wang et al. (2021) 0.002 %
Fudge et al., 2016 as in Wang et al. (2021) 0.263 %	Rotscky et al., 2007ab as in Wang et al. (2021) 0.002 %
Mulvaney et al. (2002) 0.26 %	Ekaykin et al., 2002 as in Wang et al. (2021) 0.002 %
Oerter et al., 1999 as in Thomas et al. (2017) 0.219 %	Sinisalo et al., 2013 as in Wang et al. (2021) 0.002 %
Stenni et al., 2000 as in Wang et al. (2021) 0.187 %	Budd, 1982 as in Wang et al. (2021) 0.002 %
Banta et al. (2008) 0.187 %	Melvold et al., 1998 as in Wang et al. (2021) 0.002 %
Graf et al., 2002 as in Thomas et al. (2017) 0.186 %	Yokohama, 1975 as in Wang et al. (2021) 0.002 %
Thomas et al., 2015 as in Thomas et al. (2017) 0.159 %	Bull, 1971
South Pole Meteorology Office (2024) 0.153 %	Crary et al., 1962 as in Wang et al. (2021) 0.002 %
Graf et al. (1988a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q) 0.148 %	Ding et al., 2011 as in Wang et al. (2021) 0.002 %
Meyerson et al., 2002 as in Wang et al. (2021) 0.146 %	Graf et al. 1994 as in Wang et al. (2021) 0.002 %
Higham et al., 1997 as in Wang et al. (2021) 0.138 %	Fujita et al., 2011 as in Wang et al. (2021) 0.002 %
Wang et al., 2016 as in Wang et al. (2021) 0.133 %	Brecher, 1967 as in Wang et al. (2021) 0.002 %
Motoyama et al. (2015), Wang et al. (2015, 2021) as in Wang et al. (2021) 0.132 %	Pourchet et al., 1997 as in Wang et al. (2021) 0.002 %
Graf et al. (1999a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z) 0.119 %	Pourchet et al., 2003 as in Wang et al. (2021) 0.002 %
Medley et al. (2013) 0.117 %	Loria et al., 1968 as in Wang et al. (2021) 0.001 %
Mosley-Thompson et al. 1999 as in Wang et al. (2021) 0.112 %	Orheim et al., 1986 as in Wang et al. (2021) 0.001 %
Kaspari et al., 2004 as in Wang et al. (2021) 0.104 %	Melvold, 1999 as in Wang et al. (2021) 0.001 %
Graf and Oerter (2006a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z) 0.104 %	Anschutz et al., 2009 as in Wang et al. (2021) 0.001 %
Frezzotti et al., 2013 as in Thomas et al. (2017) 0.102 %	Goodwin et al., 1988
Goodwin, 1988 as in Wang et al. (2021) 0.102 %	Jones et al., 1985 as in Wang et al. (2021) 0.001 %
Oerter et al., 2000 as in Thomas et al. (2017) 0.102 %	Bishop and Walton, 1981 as in Wang et al. (2021) 0.001 %
Oerter et al., 1999 as in Wang et al. (2021) 0.096 %	Moore et al., 1991 as in Wang et al. (2021) 0.001 %
Ekaykin et al., 2016 as in Thomas et al. (2017) 0.091 %	Ekaykin et al., 2017 as in Wang et al. (2021) 0.001 %
Frezzotti et al., 2004	Rott et al., 1998 as in Wang et al. (2021) 0.001 %
2013 as in Wang et al. (2021) 0.087 %	Isaksson and Karlén, 1994 as in Wang et al. (2021) 0.001 %
Xiao et al., 2004 as in Thomas et al. (2017) 0.087 %	Goodwin et al., 1994 as in Wang et al. (2021) 0.001 %
Mayewski and Dixon, 2013 as in Wang et al. (2021) 0.087 %	Ren et al., 1995 as in Wang et al. (2021) 0.001 %
Ding et al., 2017 as in Wang et al. (2021) 0.077 %	

7.3 Temperature

Table 8: Origins and temporal coverage of the temperature data in Greenland

reference_short	start_year	end_year	num_measurements
Alley and Koci (1990)	1989.0	1989.0	1
Ambach (1979)	1959.0	1967.0	39
Benson (1962)	1954.0	1955.0	59
Braithwaite (1993)	1991.0	1992.0	78
Charalampidis et al. (2016 2022)	2012.0	2013.0	11642
Clausen and Hammer (1988)	1977.0	1977.0	1
Clausen and Stauffer (1988)	1978.0	1978.0	20
Clausen et al. (1988)	1974.0	1985.0	11
Clement (1984)	1983.0	1983.0	28
Colbeck and Gow (1979)	1973.0	1973.0	3
Covi et al. (2022 2023)	2017.0	2019.0	58724
Davies (1954)	1960.0	1960.0	7
Davies (1967)	1962.0	1962.0	1
Diamond (1960)	1951.0	1951.0	1
Echelmeyer et al. (1992)	1984.0	1984.0	15
Fischer et al. (1995)	1990.0	1992.0	31
GC-Net unpublished	1991.0	2010.0	60735
Giese and Hawley (2015)	2004.0	2008.0	2838
Graeter et al. (2018)	2016.0	2016.0	6
Griffiths (1960)	1955.0	1956.0	225
Harrington et al. (2015)	2010.0	2012.0	5
Hawley (2014) GrIT	2011.0	2011.0	4
Heilig et al. (2018)	2016.0	2021.0	13517
Heuberger (1954)	1954.0	1954.0	1
Heuberger (1954)	1950.0	1950.0	2
Hills et al. (2017)	2015.0	2016.0	426
Hills et al. (2018)	2011.0	2017.0	71666
Historical GC-Net: Steffen et al. (1996 2001 2023); Vandecrux et al. (2023)	1995.0	2022.0	113323
Humphrey et al. (2012)	2007.0	2009.0	90836
Iizuka et al. (2016)	2015.0	2015.0	1
Kjær et al. (2015)	2015.0	2015.0	8
Koch (1913)	1912.0	1913.0	5
Langway (1961)	1959.0	1959.0	14

reference_short	start_year	end_year	num_measurements
Laternser (1994)	1992.0	1992.0	214
Law et al. (2021)	2019.0	2019.0	1
Lewis et al. (2019)	2017.0	2017.0	8
MacFerrin et al. (2021 2022)	2015.0	2019.0	179360
Matoba et al. (2015)	2014.0	2014.0	2
Meier et al. (1957)	1955.0	1955.0	25
Miller et al. (2020)	2013.0	2017.0	97316
Mock (1965)	1964.0	1964.0	12
Mock and Ragle (1963)	1964.0	1964.0	31
Nishimura et al. (2023)	2012.0	2020.0	14389
Nobles (1960)	1954.0	1954.0	14
Ohmura et al. (1992)	1990.0	1990.0	3
PROMICE/GC-Net How et al. (2023)	1995.0	2024.0	999452
Polashenski et al. (2014)	2013.0	2013.0	20
Saito et al. (2024); Harper and Humphrey (2023)	2019.0	2021.0	34080
Saito et al. (2024); Harper and Humphrey (2024)	2019.0	2019.0	15264
Schwager (2000)	1993.0	1995.0	23
Schytt (1955)	1954.0	1954.0	311
Smeets et al. (2018)	2009.0	2016.0	19697
Stauffer and Oeschger (1979)	1978.0	1978.0	1
Thomsen et al. (1991)	1990.0	1991.0	40
U.S. Army Transportation Board (1960)	1960.0	1960.0	4
Vandecrux et al. (2021); Colgan and Vandecrux (2021)	2017.0	2024.0	113894
Weertman et al. (1968)	1966.0	1966.0	1
Wegener (1930)	1930.0	1930.0	14
Yamaguchi et al. (2014)	2012.0	2012.0	4
de Quervain (1969)	1957.0	1964.0	19
van der Veen et al. (2001)	1980.0	1981.0	142

Table 9: Origins and temporal coverage of the temperature data in Antarctica

reference_short	start_year	end_year	num_measurements
Anderson et al. (1958)	1957	1957	46
Aughenbaugh et al. (1959)	1957	1958	22
Brecher et al. (1964)	1960	1960	26
Cameron et al. (1964)	1957	1957	1
Cameron et al. (1968)	1963	1965	29

reference_short	start_year	end_year	num_measurements
Crary et al. (1962)	1957	1959	54
Crary et al. (1963)	1958	1959	15
Fernandoy et al. (2010)	2007	2007	1
Fourteau et al. (2019)	2016	2016	1
Fujiwara et al. (1971)	1968	1969	23
Giovinetto et al. (1963)	1961	1961	14
Goodwin et al. (1959)	1958	1959	22
Graf et al. (1988)	1984	1990	11
Graf et al. (1999)	1990	1992	2
Inoue et al. (2023)	2018	2018	1
Kojima et al. (1964)	1958	1958	5
Long et al. (1961)	1958	1959	26
Magand et al. (2004)	2002	2021	20
Maggi et al. (1998)	1994	1994	1
Martin et al. (1978)	1975	1975	54
Mulvaney et al. (2017)	2013	2014	21
Oerter et al. (2000)	1996	1998	6
Oerter et al. (2006)	1990	1990	1
P.J. et al. (1959)	1957	1958	15
Peel et al. (1976)	1970	1970	7
Peel et al. (1982)	1975	1975	6
Picciotto et al. (1971)	1965	1968	33
Pirrit et al. (1961)	1959	1969	27
Potter et al. (1984)	1975	1975	19
Reinwarth et al. (1981)	1982	1982	1
Satow et al. (1977)	1974	1975	36
Schwanck et al. (2016)	2009	2009	1
Shimizu et al. (1964)	1960	1962	63
Shimizu et al. (1972)	1969	1970	25
Stenni et al. (2000)	1992	1992	1
Stuart et al. (1961)	1959	1960	12
Taldiceproject	1996	1996	1
Taylor et al. (1971)	1962	1963	24
Thomas et al. (1984)	1974	1978	96
Van Den Broeke et al. (1999)	1996	1996	15
Xiao et al. (2008)	2005	2005	1
Yamada et al. (1975)	1972	1973	8

reference_short	start_year	end_year	num_measurements
Zagorodnov et al. (2012)	2010	2010	1

Figure 7. Spatial distribution of the temperature measurements in Greenland (left) and Antarctica (right)

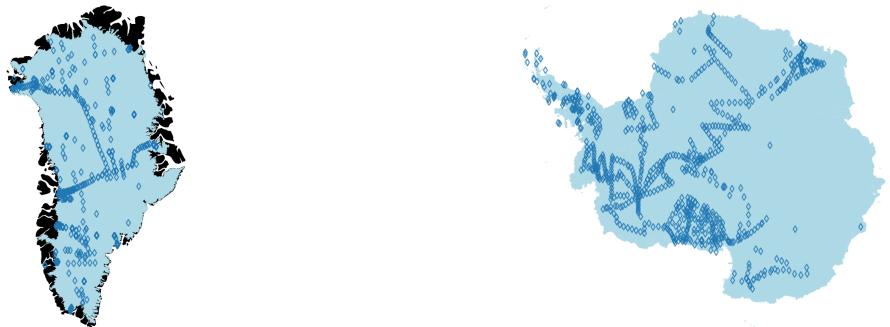


Figure 8. Composition of the temperature dataset in Greenland

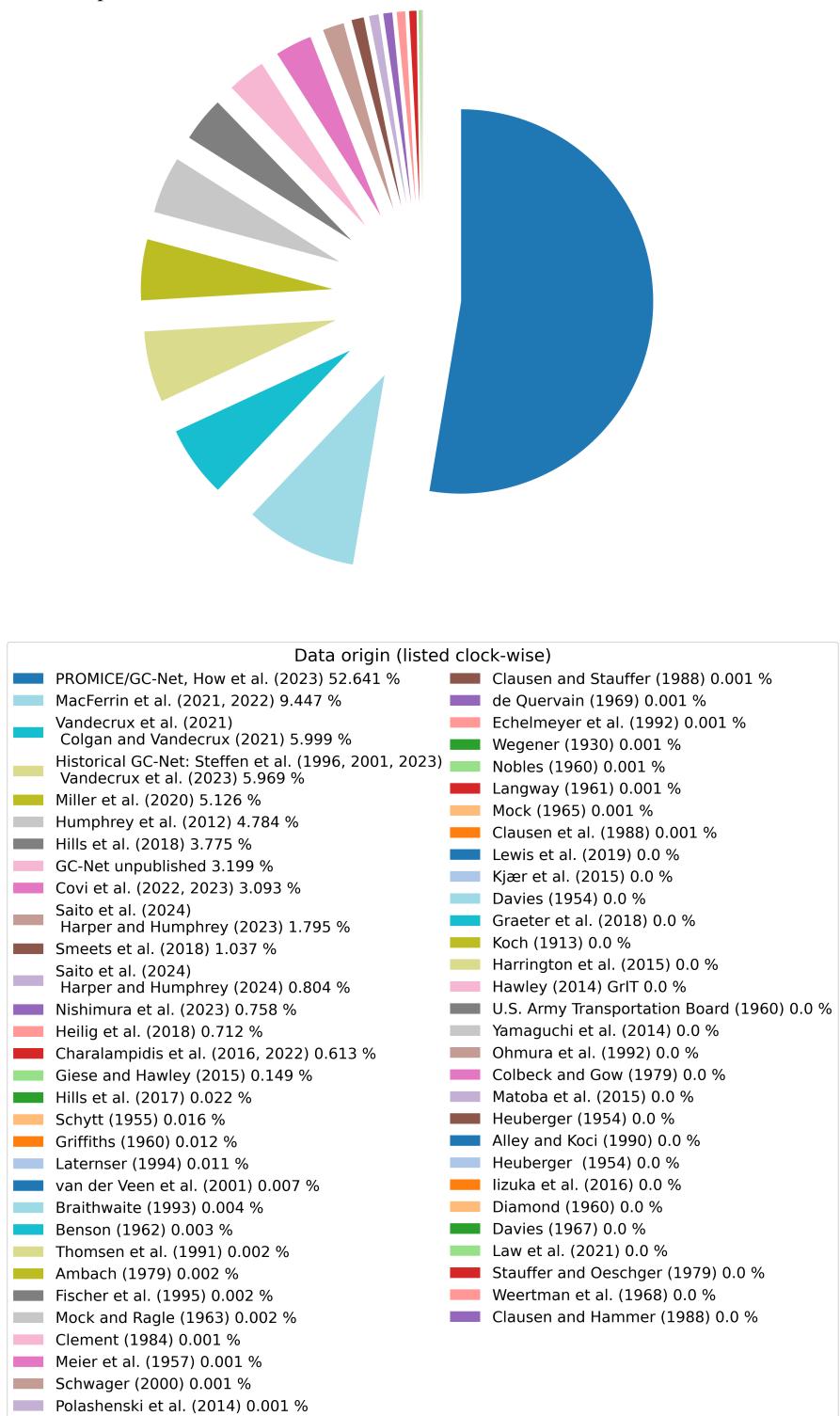
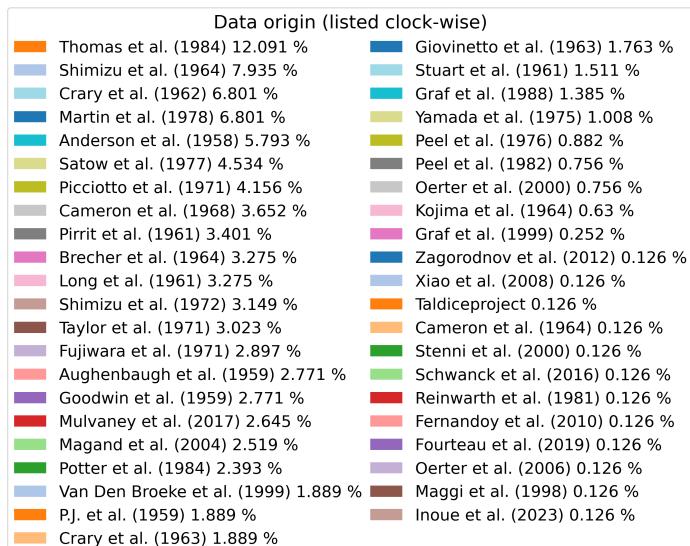


Figure 9. Composition of the temperature dataset in Antarctica



- Abermann, J., Vandecrux, B., Scher, S. et al. Learning from Alfred Wegener's pioneering field observations in West Greenland after a century of climate change. *Sci Rep* 13, 7583 (2023). <https://doi.org/10.1038/s41598-023-33225-9>
- Alley, R. B. 1987. Transformations in Polar Firn. Ph.D. Thesis, University of Wisconsin-Madison, 413 pp. <https://www.proquest.com/dissertations-theses/transformations-polar-firn-glaciology-antarctica/docview/303505507/se-2>
- 245 Clausen H. B., N. S. Gundestrup, S. J. Johnsen, R. Binchadler, and J. Zwally 1988. Glaciological investigations in the Crete area, Central Greenland: a search for a new deep-drilling Site. *Annals of Glaciology* 10, 10-15.
- Gow, A. J. 1973. Time-temperature dependence of Sintering in Polar Snow Fields. CRREL Technical note.
- Inoue, R., Fujita, S., Kawamura, K., Oyabu, I., Nakazawa, F., and Motoyama, H.: Evolution of layered density and microstructure in near_surface firn around Dome Fuji, Antarctica, EGUsphere [preprint], <https://doi.org/10.5194/egusphere-2023-1838>, 2023.
- 250 K. Wegener: Wissenschaftliche Ergebnisse der deutschen Gro'nlund-Expedition Alfred Wegener 1929 und 1930/1931 Bd. III Glaziologie.
- Kawakami, K., Iizuka, Y., Sasage, M., Matsumoto, M., Saito, T., Hori, A., et al. (2023). SE-Dome II ice core dating with half-year precision: Increasing melting events from 1799 to 2020 in southeastern Greenland. *Journal of Geophysical Research: Atmospheres*, 128, e2023JD038874. Data: Kawakami, K.; Iizuka, Y. (2023-08-11): NOAA/WDS Paleoclimatology - SE-Dome II Ice Core, South Eastern Greenland Accumulation Rate, Melt Crust and Feature, H₂O₂ and Tritium Concentration, Bulk Density 255 and Electrical Conductivity Data from 1800 to 2020 CE. NOAA National Centers for Environmental Information. <https://doi.org/10.25921/bx51-ng14>.
- Kovacs, A., W. F. Weeks, and F. Michitti 1969. Variation of Some Mechanical Properties of Polar Snow, Camp Century, Greenland. CRREL Res. Rpt. 276.
- Langway, C. C. Jr. 1967. Stratigraphic analysis of a deep ice core from Greenland. CRREL Res. Rpt. 77.
- 260 Paul C. J. P. Smeets, Peter Kuipers Munneke, Dirk van As, Michiel R. van den Broeke, Wim Boot, Hans Oerlemans, Henk Snellen, Carleen H. Reijmer and Roderik S. W. van de Wal (2018) The K-transect in west Greenland: Automatic weather station data (1993–2016), Arctic, Antarctic, and Alpine Research, 50:1, <https://doi.org/10.1080/15230430.2017.1420954>
- Saito, J., Harper, J., and Humphrey, N. (2024). Uptake and transfer of heat within the firn layer of Greenland Ice Sheet's percolation zone. *Journal of Geophysical Research: Earth Surface*, 129, e2024JF007667. <https://doi.org/10.1029/2024JF007667> . Data: Joel Harper, and Neil 265 Humphrey. (2023). Firn temperature time series to 100 m depth at two sites along the west Expéditions Glaciologiques Internationales au Groenland (EGIG) line, Greenland 2019-2021. Arctic Data Center. <https://doi.org/10.18739/A25D8NG6X>.
- Saito, J., Harper, J., and Humphrey, N. (2024). Uptake and transfer of heat within the firn layer of Greenland Ice Sheet's percolation zone. *Journal of Geophysical Research: Earth Surface*, 129, e2024JF007667. <https://doi.org/10.1029/2024JF007667> . Data: Joel Harper, and Neil Humphrey. (2024). Firn temperature-time series to 30 meter depth at five sites along the west Expéditions Glaciologiques Internationales au 270 Groenland (EGIG) line, Greenland summer of 2019. Arctic Data Center. <https://doi.org/10.18739/A2JM23H8X>.
- Sorge, E. Glaziologische Untersuchungen in Eismitte, 5. Beitrag. p62-263 in K. Wegener: Wissenschaftliche Ergebnisse der deutschen Gro'nlund-Expedition Alfred Wegener 1929 und 1930/1931 Bd. III Glaziologie.
- Zagorodnov, V., Nagornov, O., Scambos, T. A., Muto, A., Mosley-Thompson, E., Pettit, E. C., and Tyuflin, S.: Borehole temperatures reveal details of 20th century warming at Bruce Plateau, Antarctic Peninsula, *The Cryosphere*, 6, 675-686, <https://doi.org/10.5194/tc-6-675-2012>, 2012

ACFEL, Approach roads Greenland 1956-1957 program, Tech. Rep. 3-505, Arctic Construction and Frost Effects Laboratory (ACFEL) - U. S. Army Engineer Waterways Experiment Station, Corps of Engineers, Vicksburg, Mississippi, 1963.

Abermann, J., Vandecrux, B., Scher, S. et al. Learning from Alfred Wegener's pioneering field observations in West Greenland after a century of climate change. *Sci Rep* 13, 7583 (2023). <https://doi.org/10.1038/s41598-023-33225-9>

280 Adolph, A. C., and Albert, M. R. (2014). Gas diffusivity and permeability through the firn column at Summit, Greenland: measurements and comparison to microstructural properties. *The Cryosphere*, 8(1), 319–328. <https://doi.org/10.5194/tc-8-319-2014>

Agosta, C., Favier, V., Genthon, C., Gallée, H., Krinner, G., Lenaerts, J. T. M., and van den Broeke, M. R.: A 40-year accumulation dataset for Adelie Land, Antarctica and its application for model validation, *Clim. Dynam.*, 38, 75–86, <https://doi.org/10.1007/s00382-011-1103-4>, 2012.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Ahlmann, H. W., Studies in North-Eastern Greenland, *Geografiska Annaler*, 23, 145–209, 1941.

Ahlstrøm, A. P., C. E. Bøggild, O. B. Olesen, D. Petersen, and J. J. Mohr, Mass balance of the Amitsulôq ice cap, West Greenland, in *Glacier Mass Balance Changes and Meltwater Discharge (selected papers from sessions at the IAHS Assembly in Foz do Iguaçu, Brazil, 290 2005)*, no. 318 in IAHS Publication, pp. 107–115, IAHS Press: Wallingford, 2007.

Ahlstrøm, A., Ice sheet ablation assessed by observation, remote sensing and modelling, Ph.D. thesis, Faculty of Sciences University of Copenhagen, 2003.

Akers, Pete D; Savarino, Joël; Caillon, Nicolas; Servettaz, Aymeric P M; Le Meur, Emmanuel; Magand, Olivier; Agosta, Cécile; Crockford, Peter; Kobayashi, Kanon; Hattori, Shohei; Curran, Mark; van Ommen, Tas D; Jong, Lenneke; Roberts, Jason L; Martins, Jean (2022): 295 Ice density-based surface mass balance from the ABN1314-103 ice core, Aurora Basin North, Antarctica. PANGAEA, <https://doi.org/10.1594/PANGAEA.941489>

Albert, Mary. 2007. Snow and Firn Permeability: Characteristics of Snow Megadunes and their Potential Effects on Ice Core Interpretation. [densdata.xls]. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/N5639MPD>.

Alley and Koci (1990)

300 Alley, R. B. 1980. Densification and recrystallization of firn at Dome C, East Antarctica. Institute of Polar Studies Report 77, 62 pp. <http://hdl.handle.net/1811/58532>

Alley, Richard B (1999): GISP2 Stratigraphy. <https://doi.org/10.1594/PANGAEA.56103>

Ambach 1970

Ambach, W., Zum Wärmehaushalt des Grönländischen Inlandeises: Vergleichende Studie im Akkumulations- und Ablationsgebiet, Po 305 larforschung 49 (1): 44-54, 1979

Anderson, V.H., 1958. Report 825-1 Part II, USNC-IGY Antarctic Glaciological Data Field Work 1957-1958, The Ohio State Univ. Res. Found.

Anschütz, H., Mueller, K., Isaksson, E., McConnell, J. R., Fischer, H., Miller, H., Albert, M., and Winther, J.-G.: Revisiting sites of the South Pole Queen Maud Land Traverses in East Antarctica: Accumulation data from shallow firn cores, *J. Geophys. Res.*, 114, D24106, 310 <https://doi.org/10.1029/2009JD012204>, 2009.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- Anschütz, H., Sinisalo, A., Isaksson, E., McConnell, J. R., Hamran,S.-E., Bisiaux, M. M., Pasteris, D., Neumann, T. A., and Winther, J.-G.: Variation of accumulation rates over the last eight centuries on the East Antarctic Plateau derived from volcanic signals in ice cores, J. Geophys. Res., 116, D20103,<https://doi.org/10.1029/2011JD015753>, 2011.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 315 Anschütz, Helgard; Oerter, H. (2007): Physical properties of firn core DML66C03_01 (FB0401). PANGAEA, <https://doi.org/10.1594/PANGAEA.609903>
- 320 Anschütz, Helgard; Oerter, Hans (2007): Accumulation rate of firn core DML67C04_02 (FB0402). PANGAEA, <https://doi.org/10.1594/PANGAEA.609883>
- Anschütz, Helgard; Oerter, Hans (2007): Accumulation rate of firn core DML68C04_03 (FB0403). PANGAEA, <https://doi.org/10.1594/PANGAEA.609904>
- 325 Anschütz, Helgard; Oerter, Hans (2007): Accumulation rate of firn core DML71C05_01 (FB0501). PANGAEA, <https://doi.org/10.1594/PANGAEA.609905>
- Anschütz, Helgard; Oerter, Hans (2007): Accumulation rate of firn core DML72C05_02 (FB0502). PANGAEA, <https://doi.org/10.1594/PANGAEA.609906>
- Anschütz, Helgard; Oerter, Hans (2007): Accumulation rate of firn core DML73C05_03 (FB0503). PANGAEA, <https://doi.org/10.1594/PANGAEA.609907>
- 330 Anschütz, Helgard; Oerter, Hans (2007): Accumulation rate of firn core DML74C05_04 (FB0504). PANGAEA, <https://doi.org/10.1594/PANGAEA.609908>
- Aristarain, A. J., J. F. Pinglot , and M. Pourchet . 1987. Accumulation and temperature measurements on the James Ross Island, Antarctic Peninsula, Antarctica. Journal of Glaciology 33:385–407.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 335 Aristarain, A. J., Delmas, R. J., Briat, M.. 1982. Snow chemistry on James Ross Island (Antarctic Peninsula). J. Geophys. Res., 87 (C13), 11,004–11,012.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 340 Aristarain, A., Delmas, D., Stievenard, S.: Ice-core study of the link between sea-salt aerosol, sea-ice cover and climate in the Antarctic Peninsula area, Climatic Change, <https://link.springer.com/article/10.1007/s10584-004-0708-6>, 2004.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- 345 Arnaud L, Lipenkov V, Barnola JM, Gay M, Duval P. Modelling of the densification of polar firn: characterization of the snow–firn transition. Annals of Glaciology. 1998;26:39-44. <https://doi.org/10.3189/1998AoG26-1-39-44>
- Augenbaugh, N., H. Neuburg, and P. Walker, 1959. Ellsworth Station glaciological and geological data. Report 825-1 Part I, USNC-IGY Antarctic Glaciological Data Field Work 1957 and 1958, The Ohio State Univ. Res. Found.
- Bader, H. 1954. Sorge's law of densification of snow on high polar glaciers. Journal of Glaciology 2(15), 319-411.

- 350 Baeza, B., Del, D., Jimenez, J., Miro, M.: Recent evolution of the overall radioactive levels in the ice of Livingston Island (Antarctica), Applied radiation and . . . , <https://www.sciencedirect.com/science/article/pii/0969804396000334>, 1996.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Baker, I. Density and permeability measurements with depth for the NEEM 2009S2 firn core. ACADIS Gateway, accessed 2015.
- 355 Bales, R. C., Guo, Q., Shen, D., McConnell, J. R., Du, G., Burkhardt, J. F., Spikes, V. B., Hanna, E., and Cappelen, J. (2009), Annual accumulation for Greenland updated using ice core data developed during 2000–2006 and analysis of daily coastal meteorological data, *J. Geophys. Res.*, 114, D06116, <https://doi.org/10.1029/2008JD011208>.
- Banta, J. R., J. R. McConnell, M. M. Frey, R. C. Bales, and K. Taylor (2008), Spatial and temporal variability in snow accumulation at the West Antarctic Ice Sheet Divide over recent centuries, *J. Geophys. Res.*, 113, D23102, <https://doi.org/10.1029/2008JD010235>.
- 360 Banta, J.R. and J.R. McConnell. 2007. Annual accumulation over recent centuries at four sites in central Greenland. *Journal of Geophysical Research*, 112(D10114), <https://doi.org/10.1029/2006JD007887>.
- Benson, C. S. (1962) Stratigraphic studies in the snow and firn of the Greenland ice sheet, U. S. Army Snow Ice and Permafrost Research Establishment (USA SIPRE) Research Report 70, 93p
- Benson, C.S., 2010: Greenland Snow Pit and Core Stratigraphy Collection. Coll. 2010011. Roger G. Barry Archives and Resource Center.
- 365 National Snow Data Center.
- Benson, Carl S. 2013. Greenland Snow Pit and Core Stratigraphy (Analog and Digital Formats). Boulder, Colorado USA: National Snow and Ice Data Center.
- Bertler, N. A. N., Conway, H., Dahl-Jensen, D., Emanuelsson, D. B., Winstrup, M., Valletlonga, P. T., Lee, J. E., Brook, E. J., Severinghaus, J. P., Fudge, T. J., Keller, E. D., Baisden, W. T., Hindmarsh, R. C. A., Neff, P. D., Blunier, T., Edwards, R., Mayewski, P. A., Kipfstuhl, S.,
- 370 Buizert, C., Canessa, S., Dadic, R., Kjær, H. A., Kurbatov, A., Zhang, D., Waddington, E. D., Baccolo, G., Beers, T., Brightley, H. J., Carter, L., Clemens-Sewall, D., Ciobanu, V. G., Delmonte, B., Eling, L., Ellis, A., Ganesh, S., Golledge, N. R., Haines, S., Handley, M., Hawley, R. L., Hogan, C. M., Johnson, K. M., Korotkikh, E., Lowry, D. P., Mandeno, D., McKay, R. M., Menking, J. A., Naish, T. R., Noerling, C., Ollive, A., Orsi, A., Proemse, B. C., Pyne, A. R., Pyne, R. L., Renwick, J., Scherer, R. P., Semper, S., Simonsen, M., Snead, S. B., Steig, E. J., Tuohy, A., Venugopal, A. U., Valero-Delgado, F., Venkatesh, J., Wang, F., Wang, S., Winski, D. A., Winton, V. H. L., Whiteford, A.,
- 375 Xiao, C., Yang, J., and Zhang, X.: The Ross Sea Dipole – temperature, snow accumulation and sea ice variability in the Ross Sea region, Antarctica, over the past 2700 years, *Clim. Past*, 14, 193–214, <https://doi.org/10.5194/cp-14-193-2018>, 2018.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletlonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- 380 Bishop, B., Walton, W.: Bottom melting under George VI Ice Shelf, Antarctica, *Journal of Glaciology*, <https://www.cambridge.org/core/journals/journal-of-glaciology/article/bottom-melting-under-george-vi-ice-shelf-antarctica/644FCAECDEB37EB526F41512A09A2078>, 1981.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 385 Bliss, B.: Ablation on Taylor Glacier, Antarctica, NA, <https://search.proquest.com/openview/42f9a0d3d4068a35cd53d7a52c204c9f1/?pq-orignsite=gscholarandcbl=18750>, 2011.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The

AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Bob Hawley. 2014. Traverse physical, chemical, and weather observations. arcitcdata.io, <https://doi.org/10.18739/A2W232>.

390 Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 13 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.55510>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 15 [dataset].

395 PANGAEA, <https://doi.org/10.1594/PANGAEA.55511>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 31 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.55512>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 37 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.55513>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 51 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.55514>

405 Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 57 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.55515>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 73 [dataset].

410 PANGAEA, <https://doi.org/10.1594/PANGAEA.55516>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (2001): Oxygen isotope data from snowpit at GISP2 Site 44 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.59995>

Bolzan, J F; Strobel, M (1994): Accumulation-rate variations around Summit, Greenland. *Journal of Glaciology*, 40(134), 56-66, <https://doi.org/10.3189/S0022143000003798>. Data: Bolzan, J F; Strobel, M (2001): Oxygen isotope data from snowpit at GISP2 Site 571 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.59996>

Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 13. <https://doi.org/10.1594/PANGAEA.55510>

Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 15. <https://doi.org/10.1594/PANGAEA.55511>

Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 31. <https://doi.org/10.1594/PANGAEA.55512>

420 Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 37. <https://doi.org/10.1594/PANGAEA.55513>

Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 51. <https://doi.org/10.1594/PANGAEA.55514>

Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 57. <https://doi.org/10.1594/PANGAEA.55515>

Bolzan, J.F.; Strobel, M (1999): Oxygen isotope data from snowpit at GISP2 Site 73. <https://doi.org/10.1594/PANGAEA.55516>

Bolzan, J.F.; Strobel, M (2001): Oxygen isotope data from snowpit at GISP2 Site 44. <https://doi.org/10.1594/PANGAEA.59995>

- 425 Bolzan, J.F.; Strobel, M (2001): Oxygen isotope data from snowpit at GISP2 Site 571. <https://doi.org/10.1594/PANGAEA.59996>
- Box, J. E., Cressie, N., Bromwich, D. H., Jung, J., van den Broeke, M., van Angelen, J. H., Forster, R. R., Miège, C., Mosley-Thompson, E., Vinther, B., and McConnell, J. R. (2013). Greenland Ice Sheet Mass Balance Reconstruction. Part I: Net Snow Accumulation (1600–2009). *Journal of Climate*, 26(11), 3919–3934. <https://doi.org/10.1175/JCLI-D-12-00373.1>
- Box, J. E., Cressie, N., Bromwich, D. H., Jung, J., van den Broeke, M., van Angelen, J. H., Forster, R. R., Miège, C., Mosley-Thompson, E.,
430 Vinther, B., and McConnell, J. R. (2013). Greenland Ice Sheet Mass Balance Reconstruction. Part I: Net Snow Accumulation (1600–2009). *Journal of Climate*, 26(11), 3919–3934. <https://doi.org/10.1175/JCLI-D-12-00373.1>.
- Braithwaite, R. (1993). Firn temperature and meltwater refreezing in the lower accumulation area of the Greenland ice sheet, Pâkitsoq, West Greenland. *Rapport Grønlands Geologiske Undersøgelse*, 159, 109–114. <https://doi.org/10.34194/rapggu.v159.8218>
- Braithwaite, R. J., Glaciers and hydropower for Nuuk/Godthåb, West Greenland, Open File Series, vol. 89, 49 pp., The Geological Survey
435 of Greenland, København, 1989.
- Braithwaite, R. J., Glaciological investigations at Qamanarssup Sermia, interim report 1982 and appendix tables, Tech. Rep. 83/4, Grønlands Geologisk Undersøgelse, København, 1983.
- Braithwaite, R. J., and O. B. Olesen, Glaciological investigations at Qamanarssup sermia, field report 1979 -1981 and appendix tables, Tech. Rep. 82/2, Grønlands Geologisk Undersøgelse, København, 1982.
- 440 Braithwaite, R. J., and O. Olesen, Detection of climate signal by inter-stake correlations of annual ablation data Qamanârsûp Sermia, West Greenland, *Journal of Glaciology*, 35(120), 253–259, 1989.
- Brecher HH. Accumulation between Mount Chapman and “Byrd” station, Antarctica. *Journal of Glaciology*. 1967;6(48):959-960. <https://doi.org/10.3189/S0022143000020347>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 445 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Brecher, H., 1964. Glaciological Observations on the Byrd Station-South Pole Traverse, 1960- 1961. *J. of Glaciol.*, 5(39), 339-343.
- Brunk, K; Staiger, R (1986): Nachmessungen an Pegeln auf einem Blaueisfeld im Borgmassiv, Neuschwabenland, Antarktis. *Polarforschung*, 56(1/2), 23-32, hdl:10013/epic.29570.d001. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 450 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Budd 1963. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Budd, W. F., Corry, M. J., and Jacka, T. H. (1982). Results From The Amery Ice Shelf Project. *Annals of Glaciology*, 3, 36–41. <https://doi.org/10.3189/S0260305500002494>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 455 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Bull, C., Snow accumulation in Antarctica, in Research in the Antarctic, edited by L. o. Quam, pp. 367-421, Am. Assn. Advancement of Science, Washington, D.C., 1971. and Crary, A. P., H. F. Bennett, E. S. Robinson, and w. W. Boyd, Glaciological studies of the Ross ice
460 Shelf, Antarctica, 1957-60, IGY Glaciol. Rep.,§, 193 pp., 1962.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Burgess et al (2010), <https://doi.org/10.1029/2009JF001293>

Bøggild, C., F. Jung-Rothenhäusler, and H. Oerter, Glacial investigations on Storstrømmen glacier, North-East Greenland, in EXPRESS

465 REPORT: Eastern North Greenland and North-East Greenland 1995, edited by A. Higgins, 1995.

Cameron, R.L., 1964. Glaciological studies at Wilkes Station, Budd Coast, Antarctica. In Mellor, M., ed. Antarctic snow and ice studies. Antarctic research series, Vol. 2, Washington, DC, American Geophysical Union, pp. 1-36. <https://doi.org/10.1029/AR002p0001>

Cameron, R.L., E. Picciotto, H. S. Kane, and J. Gliozi, 1968. Glaciology of the Queen Maud Land Traverse, 1964-1965, South Pole-Pole of Relative Inaccessibility. Institute of Polar Studies Report, No. 23. The Ohio State Univ. Res. Found.

470 Chandler, D. M., Alcock, J. D., Wadham, J. L., Mackie, S. L., and Telling, J.: Seasonal changes of ice surface characteristics and productivity in the ablation zone of the Greenland Ice Sheet, *The Cryosphere*, 9, 487–504, <https://doi.org/10.5194/tc-9-487-2015>, 2015. Data: Chandler, David M; Wadham, Jemma; Nienow, Peter; Doyle, Samuel H; Tedstone, Andrew; Telling, Jon; Hawkings, Jonathan; Alcock, Jonathan; Linhoff, Benjamin; Hubbard, Alun L (2021): Ice ablation record from the Greenland Ice Sheet measured in spring/summer 2012 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.926842>

475 Charalampidis, C., Van As, D., Colgan, W.T., Fausto, R.S., Macferrin, M. and Machguth, H., 2016. Thermal tracing of retained meltwater in the lower accumulation area of the Southwestern Greenland ice sheet. *Annals of Glaciology*, 57(72), pp.1-10.

Chellman, N. 2009. Core Atmospheric and Snow Measurements at Summit Greenland Environmental Observatory: Snow Pit. NSF Arctic Data Center. <https://doi.org/10.18739/A2888F>.

Clausen H.B., personal communication

480 Clausen HB and Stauffer B (1988) Analyses of Two Ice Cores Drilled at the Ice-Sheet Margin in West Greenland. *Annals of Glaciology* 10, 23–27 (<https://doi.org/10.3189/S0260305500004109>)

485 Clausen, C., Dansgaard, D., Nielsen, N.: Surface accumulation on Ross Ice Shelf, *Antarctic Journal of ...*, <http://s3.amazonaws.com/Antarctica/AJUS/AJUSvXIVn5/AJUSvXIVn5p68.pdf>, 1979.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Clausen, H. B., M. Stampe, C. U. Hammer, C. S. Hvidberg, D. Dahl-Jensen, and J. P. Steffensen, Glaciological and chemical studies on ice cores from Hans Tausen Iskappe, Greenland, in *The Hans Tausen Ice Cap, Glaciology and Glacial Geology*, Meddelelser om Grønland - Geoscience, vol. 39, edited by C. U. Hammer, Danish Polar Center, 2001.

490 Clausen, H., N. Gundestrup, S. Johnsen, R. Bindschadler and J. Zwally (1988), Glaciological investigations in the Crete area, Central Greenland: A search for a new deep-drilling site. *Ann. Glaciol.*, 10, 10-15.

Clausen, H., and Hammer, C. (1988). The laki and tambora eruptions as revealed in Greenland ice cores from 11 locations. *J. Glaciology* 10, 16–22. <https://doi.org/10.1017/s0260305500004092>

495 Clausen, H.B., N.S. Gundestrup, S.J. Johnsen, R. Bindschadler, and J. Zwally. 1988. Glaciological investigations in the Crete area, Central Greenland: A search for a new deep-drilling site. *Annals of Glaciology*, 10:10-15. Data: Clausen, H.B.; Gundestrup, N.; Johnsen, S.J.; Bindschadler, R.; Zwally, J. (1998): NOAA/WDS Paleoclimatology - Crete, Milcent - Oxygen Isotope and Accumulation Data. NOAA National Centers for Environmental Information. <https://doi.org/10.25921/hhnz-ea64>.

Clement, P. "Glaciological Activities in the Johan Dahl Land Area, South Greenland, As a Basis for Mapping Hydropower Potential". Rapport Grønlands Geologiske Undersøgelse, vol. 120, Dec. 1984, pp. 113-21, <https://doi.org/10.34194/rapggu.v120.7870>.

Clement, P., Data report Johan Dahl Land 1978, Grønlands Geologisk Undersøgelse, 1981b.

500 Clement, P., Data report Johan Dahl Land 1979, Grønlands Geologisk Undersøgelse, 1981c.

- Clement, P., Data report Johan Dahl Land 1980, Grønlands Geologisk Undersøgelse, 1981d.
- Clement, P., Data report Johan Dahl Land 1981, Grønlands Geologisk Undersøgelse, 1982c.
- Clement, P., Data report Johan Dahl Land 1982, Grønlands Geologisk Undersøgelse, 1983a.
- Clement, P., Data report Johan Dahl Land 1983, Grønlands Geologisk Undersøgelse, 1983b.
- 505 Clement, P., Glaciologi på Narssaq Bræ, Massebalance 1981 og 1982, Tech. Rep. 82/5, GGU, Copenhagen, 1982a.
- Clement, P., Glaciologiske undersøgelser i Johan Dahl Land 1979, Tech. rep., Grønlands Geologiske Undersøgelse, 1980.
- Clerx, N., Machguth, H., Tedstone, A., Jullien, N., Wever, N., Weingartner, R., and Roessler, O.: In situ measurements of meltwater flow through snow and firn in the accumulation zone of the SW Greenland Ice Sheet, *The Cryosphere*, 16, 4379–4401, <https://doi.org/10.5194/tc-16-4379-2022>, 2022. Data: Clerx, N., Machguth, H., Tedstone, A., Jullien, N., Wever, N., Weingartner, R., and Roessler, O. (2022).
- 510 DATASET: In situ measurements of meltwater flow through snow and firn in the accumulation zone of the SW Greenland Ice Sheet [Data set]. In *The Cryosphere*. Zenodo. <https://doi.org/10.5281/zenodo.7119818>
- Colbeck S. and A. Gow. 1979. The margin of the Greenland Ice Sheet at Isua. *Journal of Glaciology*. 24: 155-165. 10.3189/S0022143000014714
- Cole - Dai, J. (2004) "Sulfate-Based Volcanic Record from South Pole Ice Core" U.S. Antarctic Program (USAP) Data Center. <https://doi.org/https://doi.org/10.7265/N5CR5R88>.
- 515 Cole-Dai, J., E. Mosley-Thompson, S. P. Wight, and L. G. Thompson, A 4100-year record of explosive volcanism from an east Antarctica ice core, *J. Geophys. Res.*, 105(D19), 24,431–24,441, 2000.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Colgan, W., Pedersen, A., Binder, D., Machguth, H., Abermann, J., and Jayred, M. (2018). Initial field activities of the Camp Century Climate Monitoring Programme in Greenland. *GEUS Bulletin*, 41, 75-78. <https://doi.org/10.34194/geusb.v41.4347>. Data: Colgan, W., Camp Century: Firn density measurements in cores B73 and B62, <https://doi.org/10.22008/FK2/UFGONU>, GEUS Dataverse, V1, 2021
- 520 Conway, H. (2003) Roosevelt Island Ice Core Density and Beta Count Data, Version 1. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. <https://doi.org/http://dx.doi.org/10.7265/N55718ZW>.
- Cooper, Matthew; Smith, Laurence C; Rennermalm, Asa K; Pitcher, Lincoln; Ryan, Jonathan C; Yang, Kang; Cooley, Sarah (2018):
- 525 Direct measurements of ice density down to 1m depth in the Greenland Ice Sheet ablation zone during July 2016 from shallow ice cores. PANGAEA, <https://doi.org/10.1594/PANGAEA.886747>
- Courville, Z. R., Albert, M. R., Fahnestock, M. A., Cathles, L. M., and Shuman, C. A. (2007). Impacts of an accumulation hiatus on the physical properties of firn at a low- accumulation polar site. *Journal of Geophysical Research: Earth Surface*, 112(F2). <https://doi.org/10.1029/2005JF000429>
- 530 Covi, F., Hock, R., and Reijmer, C.: Challenges in modeling the energy balance and melt in the percolation zone of the Greenland ice sheet. *Journal of Glaciology*, 69(273), 164-178. <https://doi.org/10.1017/jog.2022.54>, 2023. and Covi, F., Hock, R., Rennermalm, A., Leidman S., Miege, C., Kingslake, J., Xiao, J., MacFerrin, M., Tedesco, M.: Meteorological and firn temperature data from three weather stations in the percolation zone of southwest Greenland, 2017 - 2019. Arctic Data Center. <https://doi.org/10.18739/A2BN9X444>, 2022.
- Crary, A.P., 1963. Results of United States Traverses in East Antarctica, 1958-1961. IGY Glaciological Report, No. 7, AGU.
- 535 Crary, A.P., E.S. Robinson, H.F. Bennett, and W.W. Boyd, Jr., 1962. Glaciological Studies of The Ross Ice Shelf, Antarctica, 1957-1960. IGY Glaciological Report, No. 6, Am. Geogr. Soc.
- Cunde, X., Yuansheng, L., Allison, I., Shugui, H., Dreyfus, G., Barnola, J., . . . Kameda, T. (2008). Surface characteristics at Dome A, Antarctica: First measurements and a guide to future ice-coring sites. *Annals of Glaciology*, 48, 82-87. <https://doi.org/10.3189/172756408784700653>

- Cunde, X., Yuansheng, L., Allison, I., Shugui, H., Dreyfus, G., Barnola, J., . . . Kameda, T. (2008). Surface characteristics at Dome A, 540 Antarctica: First measurements and a guide to future ice-coring sites. *Annals of Glaciology*, 48, 82-87. <https://doi.org/10.3189/172756408784700653>
<https://doi.org/10.1007/s11434-007-0520-6>
- Dattler, M. E., Lenaerts, J. T. M., and Medley, B.: Significant spatial variability in radar-derived West Antarctic accumulation linked to surface winds and topography, *Geophys. Res. Lett.*, 46, 126–134, <https://doi.org/10.1029/2019GL085363>, 2019.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field 545 observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Davies, T.C., Structures in the upper snow layers of the southern Dome Greenland ice sheet, CRREL research report 115, 1954
- Davis RM: Approach roads Greenland 1960?1964 Technical Report 133. Corps of Engineers Cold Regions Research and Engineering Laboratory 1967
- Davis, R. M., Approach roads, Greenland, 1958-59, Tech. Rep. 125, Corps of Engineers, Cold Regions Research and Engineering Laboratory, U.S. Army, 1971. 550
- Davis, R., Approach roads, Greenland 1960-1964, Tech. Rep. 133, Corps of Engineers, Cold Regions Research and Engineering Laboratory, U.S. Army, 1967.
- Diamond, M. (1960), Air temperature and precipitation on the Greenland Ice Sheet, *J. Glaciol.*, 3, 558-567.
- Dibb et al., 2007 (Seasonal variations in the soluble ion content of snow at Summit, Greenland: Constraints from three years of daily 555 surface snow samples, *Atmos. Environ.*, 41, 5007-5019).
- Dibb, J. (2017) Personal Communication
- Dibb, J. E., Albert, M., Anastasio, C., Atlas, E., Beyersdorf, A. J., Blake, N. J., et al. (2007). An overview of air-snow exchange at Summit, Greenland: Recent experiments and findings. *Atmospheric Environment*, 41(24), 4995–5006. <https://doi.org/10.1016/j.atmosenv.2006.12.006>
- Dibb, J. E., and M. Fahnestock, Snow accumulation, surface height change and firn densification at Summit, Greenland: Insights from two 560 years of in-situ observation, *Journal of Geophysical Research*, 109, D24113, <https://doi.org/10.1029/2003JD004300>, 2004.
- Dibb, J. E., and M. Fahnestock, 2004, Snow accumulation, surface height change and firn densification at Summit, Greenland: Insights from two years of in-situ observation, *Journal of Geophysical Research*, 109, D24113, <https://doi.org/10.1029/2003JD004300>.
- Ding, M., Xiao, C., Li, Y., Ren, J., Hou, S., Jin, B., and Sun, B.: Spatial variability of surface mass balance along a traverse route from Zhongshan station to Dome A, Antarctica, *J. Glaciol.*, 57, 658–666, <https://doi.org/10.3189/002214311797409820>, 2011.. As in: Wang, Y., 565 Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Ding, M., Xiao, W., Xiao, C., Yang, J., Zhang, D., Li, R., and Zhang, T.: The snowfall history of Lambert Glacier basin during the past 300 years inferred from an ice core at LGB69, East Antarctica, 37, 1111–1118, <https://doi.org/10.11928/j.issn.1001-7410.2017.05.18>, 2017 570 (in Chinese).. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Dome-F Deep Coring Group. Deep ice-core drilling at Dome Fuji and glaciological studies in east Dronning Maud Land, Antarctica. *Annals of Glaciology*. 1998;27:333-337. <https://doi.org/10.3189/1998AoG27-1-333-337>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, 575 P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Doumani, G. A. and J. Pirritt 1960. ICG Antarctic Glaciological Data: Field Work 1959-60: Glaciology, Victoria Land Traverse 1959-60. The Ohio State University Research Foundation Report 968-2. <http://hdl.handle.net/1811/51131>

Echelmeyer K, Harrison WD, Clarke TS and Benson C (1992) Surficial Glaciology of Jakobshavns Isbræ, West Greenland: Part II. 580 Ablation, accumulation and temperature. *Journal of Glaciology* 38(128), 169–181, <https://doi.org/10.3189/S0022143000009709>

Eicken, 1994. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Ekaykin, A. A., Kozachek, A. V., Lipenkov, V. Y., and Shibaev, Y. A.: Multiple climate shifts in the Southern Hemisphere over the past 585 three centuries based on central Antarctic snow pits and core studies, *Ann. Glaciol.*, 55, 259–266, <https://doi.org/10.3189/201AoG66A189>, 2014. . . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

Ekaykin, A. A., Vladimirova, D. O., Lipenkov, V. Y., and Masson-Delmotte, V.: Climatic variability in Princess Elizabeth Land (East 590 Antarctica) over the last 350 years, *Clim. Past*, 13, 61–71, <https://doi.org/10.5194/cp-13-61-2017>, 2017.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Ekaykin, A., Eberlein, L., Lipenkov, V., Popov, S., Scheinert, M., Schröder, L., and Turkeev, A.: Non-climatic signal in ice core records: 595 lessons from Antarctic megadunes, *The Cryosphere*, 10, 1217–1227, <https://doi.org/10.5194/tc-10-1217-2016>, 2016.. . . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

Ekaykin, A., Lipenkov, V. Y., Barkov, N. I., Petit, J. R., and Masson-Delmotte, V. (2002). Spatial and temporal variability in isotope composition of recent snow in the vicinity of vostok station, antarctica: implications for ice-core record interpretation. *Annals of Glaciology*, 600 35, 181-186. <https://doi.org/10.3189/172756402781816726>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Etheridge, D. M. and C. W. Wookey 1989. Ice core drilling at a high accumulation area of Law Dome, Antarctica, 1987, in *Ice Core Drilling, Proceedings of the Third International Workshop on Ice Core Drilling Technology*, Grenoble, France, October 10-14, 1988, edited by 605 C. Rado and D. Beaudoin, pp. 86–96, Centre Natl. de la Rech. Sci., Grenoble, <https://icedrill.org/library/ice-core-drilling-high-accumulation-area-law-dome>

Fain, X., Ferrari, C. P., Dommergue, A., Albert, M. R., Battle, M., Severinghaus, J., et al. (2009). Polar firn air reveals large-scale impact of anthropogenic mercury emissions during the 1970s. *Proceedings of the National Academy of Sciences*, 106(38), 16114– 16119. <https://doi.org/10.1073/pnas.0905117106>

Fausto, R. S., van As, D., Mankoff, K. D., Vandecrux, B., Citterio, M., Ahlstrøm, A. P., Andersen, S. B., Colgan, W., Karlsson, N. B., 610 Kjeldsen, K. K., Korsgaard, N. J., Larsen, S. H., Nielsen, S., Pedersen, A. Ø., Shields, C. L., Solgaard, A. M., and Box, J. E.: Programme for Monitoring of the Greenland Ice Sheet (PROMICE) automatic weather station data, *Earth Syst. Sci. Data*, 13, 3819–3845, <https://doi.org/10.5194/essd-13-3819-2021> , 2021. and How, P., Ahlstrøm, A.P., Andersen, S.B., Box, J.E., Citterio, M., Colgan, W.T., Fausto, R., Karlsson, N.B., Jakobsen, J., Larsen, S.H., Mankoff, K.D., Pedersen, A.Ø., Rutishauser, A., Shields, C.L., Solgaard, A.M., van As, D., Vandecrux, B.,

Wright, P.J., PROMICE and GC-Net automated weather station data in Greenland, <https://doi.org/10.22008/FK2/IW73UU>, GEUS Dataverse,

615 2022.

- Fausto, R.S. and van As, D., (2019). Programme for monitoring of the Greenland ice sheet (PROMICE): Automatic weather station data. Version: v03, Dataset published via Geological Survey of Denmark and Greenland. <https://doi.org/https://doi.org/10.22008/promice/data/aws>
- Fausto, Robert S., 2021, Snow-water equivalent of snowpacks, <https://doi.org/10.22008/FK2/B5KVJV>, GEUS Dataverse, V2
- Favier, V., Agosta, C., Parouty, S., Durand, G., Delaygue, G., Gallée, H., Drouet, A.-S., Trouvilliez, A., and Krinner, G.: An updated and quality controlled surface mass balance dataset for Antarctica, *The Cryosphere*, 7, 583–597, <https://doi.org/10.5194/tc-7-583-2013>, 2013.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Favier, V.: GacioClim-SAMBA dataset (2024)
- Fernando, F et al. (2010): Temporal and Spatial variation of stable-isotope ratios and accumulation rates in the hinterland of Neumayer station, East Antarctica. *Journal of Glaciology*, 56(198), 673–687, <https://doi.org/10.3189/002214310793146296>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Fernando, F., Meyer, H., Oerter, H., Wilhelms, F., Graf, W., Schwander, J., 2010. Temporal and spatial variation of stable-isotope ratios and accumulation rates in the hinterland of Neumayer station, East Antarctica. *Journal of Glaciology* 56, 673–687. <https://doi.org/10.3189/002214310793146296>
- Fernando, Francisco; Meyer, Hanno; Oerter, H.; Wilhelms, F.; Graf, W.; Schwander, Jakob (2010): Annual means of d18O, density, and accumulation rates of firn core DML641C02_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.753157>
- Fernando, Francisco; Meyer, Hanno; Oerter, H.; Wilhelms, F.; Graf, W.; Schwander, Jakob (2010): Annual means of d18O, density, and accumulation rates of firn core DML651C02_03. PANGAEA, <https://doi.org/10.1594/PANGAEA.753158>
- Fernando, Francisco; Meyer, Hanno; Oerter, H.; Wilhelms, F.; Graf, W.; Schwander, Jakob (2010): Annual means of d18O, deuterium, density, and accumulation rates of firn core NM02C02_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.753159>
- Fernando, Francisco; Meyer, Hanno; Oerter, Hans; Wilhelms, Frank; Graf, Wolfgang; Schwander, Jakob (2010): Annual means of d18O, density, and accumulation rates of firn core DML641C02_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.753157>
- Fernando, Francisco; Meyer, Hanno; Oerter, Hans; Wilhelms, Frank; Graf, Wolfgang; Schwander, Jakob (2010): Annual means of d18O, density, and accumulation rates of firn core DML651C02_03. PANGAEA, <https://doi.org/10.1594/PANGAEA.753158>
- Fernando, Francisco; Meyer, Hanno; Oerter, Hans; Wilhelms, Frank; Graf, Wolfgang; Schwander, Jakob (2010): Annual means of d18O, deuterium, density, and accumulation rates of firn core NM02C02_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.753159>
- Fernando, Francisco; Meyer, Hanno; Oerter, Hans; Wilhelms, Frank; Graf, Wolfgang; Schwander, Jakob (2010): Borehole temperature profile of ice core DML94C07_38. PANGAEA, <https://doi.org/10.1594/PANGAEA.753165>
- Ferreira, R.S., Simoes, J.C., Thoen, I.U., Bernardo, R.T. Glaciochemistry and environmental interpretation of a snow core from West Antarctica. Manuscript AABC-2024-0243 submitted to the Annal of the Brazilian Academy of Sciences (2024)
- Ferris, David G., Jihong Cole-Dai, Angelica R. Reyes, and Drew M. Budner (2011), South Pole ice core record of explosive volcanic eruptions in the First and Second Millennia A.D. and evidence of a large eruption in the tropics around 535 A.D., *Journal of Geophysical Research-Atmospheres*, 116, D17308, <https://doi.org/10.1029/2011JD015916>.

Fischer, H., D. Wagenbach, M. Laternser and W. Haeberli (1995), Glacio-meteorological and isotopic studies along the EGIG line, central Greenland, *J. Glaciol.*, 41, 515- 527.

Fischer, H., Wagenbach, D., Laternser, M. and Haeberli, W., 1995. Glacio-meteorological and isotopic studies along the EGIG line, central Greenland. *Journal of Glaciology*, 41(139), pp. 515-527.

655 Fourteau, K., Arnaud, L., Faïn, X., Martinerie, P., Etheridge, D. M., Lipenkov, V., and Barnola, J.-M.: Historical porosity data in polar firn, *Earth Syst. Sci. Data*, 12, 1171–1177, <https://doi.org/10.5194/essd-12-1171-2020>, 2020. Data: Fourteau, Kévin; Arnaud, Laurent; Faïn, Xavier; Martinerie, Patricia; Etheridge, David M; Lipenkov, Vladimir Ya; Barnola, Jean-Marc (2019): Gas pycnometry firn porosity data of a firn ice core from site DE08-2. PANGAEA, <https://doi.org/10.1594/PANGAEA.907674>,

660 Fourteau, K., Arnaud, L., Faïn, X., Martinerie, P., Etheridge, D. M., Lipenkov, V., and Barnola, J.-M.: Historical porosity data in polar firn, *Earth Syst. Sci. Data*, 12, 1171–1177, <https://doi.org/10.5194/essd-12-1171-2020>, 2020. Data: Fourteau, Kévin; Arnaud, Laurent; Faïn, Xavier; Martinerie, Patricia; Etheridge, David M; Lipenkov, Vladimir Ya; Barnola, Jean-Marc (2019): Gas pycnometry firn porosity data of a firn ice core from site Summit. PANGAEA, <https://doi.org/10.1594/PANGAEA.907675>,

665 Fourteau, K., Arnaud, L., Faïn, X., Martinerie, P., Etheridge, D. M., Lipenkov, V., and Barnola, J.-M.: Historical porosity data in polar firn, *Earth Syst. Sci. Data*, 12, 1171–1177, <https://doi.org/10.5194/essd-12-1171-2020>, 2020. Data: Fourteau, Kévin; Arnaud, Laurent; Faïn, Xavier; Martinerie, Patricia; Etheridge, David M; Lipenkov, Vladimir Ya; Barnola, Jean-Marc (2019): Gas pycnometry firn porosity data of a firn ice core from site Vostok. PANGAEA, <https://doi.org/10.1594/PANGAEA.907676>,

670 Fourteau, K., Martinerie, P., Faïn, X., Schaller, C. F., Tuckwell, R. J., Löwe, H., Arnaud, L., Magand, O., Thomas, E. R., Freitag, J., Mulvaney, R., Schneebeli, M., and Lipenkov, V. Ya.: Multi-tracer study of gas trapping in an East Antarctic ice core, *The Cryosphere*, 13, 3383–3403, <https://doi.org/10.5194/tc-13-3383-2019>, 2019

675 Freitag, J.; Kipfstuhl, Sepp; Weißbach, Stefanie; Karlsson, Nanna Bjørnholt; Münch, Thomas; Hörhold, Maria (2021): Density profile of the NG2012 firn core. PANGAEA, <https://doi.org/10.1594/PANGAEA.931739>,

Freitag, Johannes; Kipfstuhl, Sepp; Weißbach, Stefanie; Karlsson, Nanna Bjørnholt; Münch, Thomas; Hörhold, Maria (2022): Accumulation rate of the B18_2012 firn core. PANGAEA, <https://doi.org/10.1594/PANGAEA.944454>,

680 Freitag, Johannes; Kipfstuhl, Sepp; Weißbach, Stefanie; Karlsson, Nanna Bjørnholt; Münch, Thomas; Hörhold, Maria (2022): Accumulation rate of the B21_2012 firn core. PANGAEA, <https://doi.org/10.1594/PANGAEA.944512>,

Freitag, Johannes; Kipfstuhl, Sepp; Weißbach, Stefanie; Karlsson, Nanna Bjørnholt; Münch, Thomas; Hörhold, Maria (2022): Accumulation rate of the B23_2012 firn core. PANGAEA, <https://doi.org/10.1594/PANGAEA.944513>,

Freitag, Johannes; Kipfstuhl, Sepp; Weißbach, Stefanie; Karlsson, Nanna Bjørnholt; Münch, Thomas; Hörhold, Maria (2022): Accumulation rate of the NG2012 firn core. PANGAEA, <https://doi.org/10.1594/PANGAEA.944514>,

685 Frezzotti, F., Pourchet, P., Flora, F., Gandolfi, G., Gay, G.: New estimations of precipitation and surface sublimation in East Antarctica from snow accumulation measurements, *Climate Dynamics*, <https://link.springer.com/article/10.1007/s00382-004-0462-5>, 2004. and Frezzotti, M., Scarchilli, C., Becagli, S., Proposito, M., and Urbini, S.: A synthesis of the Antarctic surface mass balance during the last 800 yr, *The Cryosphere*, 7, 303–319, <https://doi.org/10.5194/tc-7-303-2013>, 2013.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Frezzotti, F., Pourchet, P., Flora, F., Gandolfi, G., Gay, G.: New estimations of precipitation and surface sublimation in East Antarctica from snow accumulation measurements, *Climate Dynamics*, <https://link.springer.com/article/10.1007/s00382-004-0462-5>, 2004.. .. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletonga, P., Medley, B., Lenaerts, J., Bertler, N.,

van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over
690 the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

Frezzotti, F., Pourchet, P., Flora, F., Gandolfi, G., Gay, G.: New estimations of precipitation and surface sublimation in East Antarctica from
snow accumulation measurements, *Climate Dynamics*, <https://link.springer.com/article/10.1007/s00382-004-0462-5>, 2004.. As in: Wang, Y.,
Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass
balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>,
695 2021.

Frezzotti, F., Pourchet, P., Flora, F., Gandolfi, G., Gay, G.: New estimations of precipitation and surface sublimation in East Antarctica
from snow accumulation measurements, *Climate Dynamics*, <https://link.springer.com/article/10.1007/s00382-004-0462-5>, 2004.. Frezzotti,
M., Urbini, S., Proposito, M., Scarchilli, C., and Gandolfi, S. (2007). Spatial and temporal variability of surface mass balance near Talos
Dome, East Antarctica. *Journal of Geophysical Research*, 112(F2), F02032. <https://doi.org/10.1029/2006JF000638>.. As in: Thomas, E. R.,
700 van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke,
M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000
years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

Frezzotti, M., Pourchet, M., Flora, O., Gandolfi, S., Gay, M., Urbini, S., Vincent, C., Becagli, S., Gragnani, R., Proposito, M., Severi, M.,
Traversi, R., Udisti, R., and Fily, M.: Spatial and temporal variability of snow accumulation in East Antarctica from traverse data, *J. Glaciol.*,
705 51, 113–124, <https://doi.org/10.3189/172756505781829502>, 2005.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S.,
and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet,
Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Frezzotti, M., Scarchilli, C., Becagli, S., Proposito, M., and Urbini, S.: A synthesis of the Antarctic surface mass balance during the last
800 yr, *The Cryosphere*, 7, 303–319, <https://doi.org/10.5194/tc-7-303-2013>, 2013.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J.,
710 Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti,
M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513,
<https://doi.org/10.5194/cp-13-1491-2017>, 2017.

Frezzotti, M., Urbini, S., Proposito, M., Scarchilli, C., and Gandolfi, S.: Spatial and temporal variability of surface mass balance near Talos
Dome, East Antarctica, *J. Geophys. Res.*, 112, F02032, <https://doi.org/10.1029/2006JF000638>, 2007.. As in: Wang, Y., Ding, M., Reijmer, C.
715 H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations
over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Fristrup, B., Danish expedition to Peary Land 1947 - 1950, *Geog. Rev.*, 42(1), 87–97, 1952.

Fudge, F., Markle, M., Cuffey, C.: Variable relationship between accumulation and temperature in West Antarctica for the past 31,000
years, *Geophysical* . . . , <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/2016GL068356>, 2016.... As in: Thomas, E. R., van Wessem,
720 J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon,
D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*,
13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

Fudge, F., Markle, M., Cuffey, C.: Variable relationship between accumulation and temperature in West Antarctica for the past 31,000
years, *Geophysical* . . . , <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/2016GL068356>, 2016.. As in: Wang, Y., Ding, M., Reijmer,
725 C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations
over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- Fujita, S., Holmlund, P., Andersson, I., Brown, I., Enomoto, H., Fujii, Y., Fujita, K., Fukui, K., Furukawa, T., Hansson, M., Hara, K., Hoshina, Y., Igarashi, M., Iizuka, Y., Imura, S., Ingvander, S., Karlin, T., Motoyama, H., Nakazawa, F., Oerter, H., Sjöberg, L. E., Sugiyama, S., Surdyk, S., Ström, J., Uemura, R., and Wilhelms, F.: Spatial and temporal variability of snow accumulation rate on the East Antarctic ice divide between Dome Fuji and EPICA DML, *The Cryosphere*, 5, 1057–1081, <https://doi.org/10.5194/tc-5-1057-2011>, 2011.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Fujiwara, K. and Endo, Y.: Report of the Japanese Traverse Syowa-South Pole 1968- 1969, JARE Scientific Reports, pp. 68–109, 1971.
- Fujiwara, K. and Endo, Y.: Traverse Syowa-South Pole 1968–1969, JARE Scientific Tokyo, Reports, Special Issue, No. 2, 68–109, National Institute of Polar Research, Tokyo, 1971.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Fujiwara, K., and Y. Endo, 1971. Preliminary Report of Glaciological Studies. Report of the Japanese Traverse Syowa-South Pole 1968-1969, JARE Scientific Reports, Special Issue, No. 2, 68-109.
- GC-Net unpublished
- GEUS unpublished
- Gallet, J.-C., Domine, F., Arnaud, L., Picard, G., Savarino, J., 2011. Vertical profile of the specific surface area and density of the snow at Dome C and on a transect to Dumont D'Urville, Antarctica – albedo calculations and comparison to remote sensing products. *The Cryosphere* 5, 631–649. <https://doi.org/10.5194/tc-5-631-2011>
- Gerhard, N. P.; Simoes, J. C.; Ferron, F. A.; Bernardo, R. T.; Correia, A. L.; Schwanck, F. Trace elements in an ultraclean snow pit on the King George Island. In: XXXV Scientific Committee on Antarctic Research (SCAR), Davos, Switzerland, 2018.
- Gerland, S.; Wilhelms, F. (1999): Continuous density log of icecore BER11C95_25. PANGAEA, <https://doi.org/10.1594/PANGAEA.227732>
- Giese AL and Hawley RL (2015) Reconstructing thermal properties of firn at Summit, Greenland, from a temperature profile time series. *Journal of Glaciology* 61(227), 503–510 (<https://doi.org/10.3189/2015JoG14J204>)
- Giovinetto, M. B. (1960), Glaciology report for 1958, South Pole Station, Res. Found. Rep. 825-2 IV, Ohio State Univ., Columbus.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Giovinetto, M.B., 1963. Glaciological Studies on the McMurdo-South Pole Traverse, 1960-1961. Institute of Polar Studies Report, No. 7, The Ohio State Univ. Res. Found.
- Goodwin et al., 1994. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Goodwin, 1995. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- Goodwin, B. P., Mosley-Thompson, E., Wilson, A. B., Porter, S. E., and Sierra-Hernandez, M. R.: Accumulation Variability in the Antarctic Peninsula: The Role of Large-Scale Atmospheric Oscillations and Their Interactions, *J. Climate*, 29, 2579–2596, 2016... As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Goodwin, I. D. (1988), Ice sheet topography and surface characteristics in Eastern Wilkes Land, East Antarctica, ANARE Res. Notes 64, 100 pp., Antarct. Div., Kingston, Tas., Australia. and Jones D., Hendy M. (1985) Glaciological measurements in eastern Wilkes Land, Antarctica. , Jacka T.H. (ed.) ANARE Research Notes 28 . 164-173 ; As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Goodwin, I. D. (1988), Ice sheet topography and surface characteristics in Eastern Wilkes Land, East Antarctica, ANARE Res. Notes 64, 100 pp., Antarct. Div., Kingston, Tas., Australia.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Goodwin, R., 1959. Ellsworth Traverse, 1958-1959. Report 825-2 Part III, USNC-IGY Antarctic Glaciological Data Field Work 1958-1959, The Ohio State Univ. Res. Found.
- Gow AJ, de Blander F, Crozaz G, Picciotto E. Snow Accumulation at “Byrd” Station, Antarctica. *Journal of Glaciology*. 1972;11(61):59-64. <https://doi.org/10.3189/S0022143000022498>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Gow, A. J. 1968. Deep ice core studies of the accumulation and densification of snow at Byrd Station and Little America V, Antarctica. CRREL Res. Rpt. 197. <http://hdl.handle.net/11681/5803>
- Graeter, K., Osterberg, E. C., Ferris, D., Hawley, R. L., Marshall, H. P. and Lewis, G., 2018, Ice Core Records of West Greenland Surface Melt and Climate Forcing, *Geophys. Res. Lett.*, <https://doi.org/10.1002/2017GL076641>
- Graeter, K., Osterberg, E. C., Ferris, D., Hawley, R. L., Marshall, H. P. and Lewis, G., 2018, Ice Core Records of West Greenland Surface Melt and Climate Forcing, *Geophys. Res. Lett.*, <https://doi.org/10.1002/2017GL076641>
- Graeter, K., Osterberg, E. C., Ferris, D., Hawley, R. L., Marshall, H. P. and Lewis, G.: Ice Core Records of West Greenland Surface Melt and Climate Forcing, *Geophys. Res. Lett.*, <https://doi.org/10.1002/2017GL076641>, 2018.
- Graf, W et al. (1988): Accumulation and ice core-studies on Filchner-Ronne Ice Shelf, Antarctica. *Annals of Glaciology*, 11, 23-31, [hdl:10013/epic.25953.d001](https://hdl.handle.net/10013/epic.25953.d001)
- Graf, W et al. (1999): Surface accumulation on Foundation Ice Stream, Antarctica. *Annals of Glaciology*, 29, 23-28, <https://doi.org/10.3189/172756499781820987>
- Graf, W et al. (2002): Stable-isotope records from Dronning Maud Land, Antarctica. *Annals of Glaciology*, 35, 195-201, <https://doi.org/10.3189/172756402781816492>. .. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Graf, W., H. Moser, O. Reinwarth, J. Kipfstuhl, H. Oerter, A. Minikin, and D. Wagenbach, Snow-accumulation rates and isotopic content (H₂, H₃) of near surface firn from the Filchner-Ronne Ice Shelf, Antarctica, *Ann. Glaciol.*, 20, 121–128, 1994.. As in: Wang, Y., Ding, M.,

Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

805 Graf, W., Moser, H., Oerter, H., Reinwarth, O., Stichler, W., 1988. Accumulation and Ice- Core Studies on Filchner-Ronne Ice Shelf, Antarctica. *Annals of Glaciology* 11, 23–31. <https://doi.org/10.3189/S0260305500006273>

Graf, W., Reinwarth, O., Oerter, H., Mayer, C., Lambrecht, A., 1999. Surface accumulation on Foundation Ice Stream, Antarctica. *Annals of Glaciology* 29, 23–28. <https://doi.org/10.3189/172756499781820987>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Annual means of density, d¹⁸O, and accumulation rates of ice core FRI07C84_340. PANGAEA, <https://doi.org/10.1594/PANGAEA.549170>

810 Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Annual means of density, d¹⁸O, and accumulation rates of snow pit FRI05S86_240. PANGAEA, <https://doi.org/10.1594/PANGAEA.548930>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI01S84_141. PANGAEA, <https://doi.org/10.1594/PANGAEA.548909>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI03S86_345. PANGAEA, <https://doi.org/10.1594/PANGAEA.548910>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI04S84_140. PANGAEA, <https://doi.org/10.1594/PANGAEA.548911>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI05S84_240. PANGAEA, <https://doi.org/10.1594/PANGAEA.548912>

820 Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI0686S_241. PANGAEA, <https://doi.org/10.1594/PANGAEA.548914>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI06S84_241. PANGAEA, <https://doi.org/10.1594/PANGAEA.548915>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI07S84_340. PANGAEA, <https://doi.org/10.1594/PANGAEA.548916>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI07S86_340. PANGAEA, <https://doi.org/10.1594/PANGAEA.548917>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI08S84_341. PANGAEA, <https://doi.org/10.1594/PANGAEA.548918>

830 Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI08S86_341. PANGAEA, <https://doi.org/10.1594/PANGAEA.548919>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI13S86_335. PANGAEA, <https://doi.org/10.1594/PANGAEA.548920>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI15S86_131. PANGAEA, <https://doi.org/10.1594/PANGAEA.548921>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI16S86_230. PANGAEA, <https://doi.org/10.1594/PANGAEA.548922>

Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d¹⁸O of snow pit FRI17S86_231. PANGAEA, <https://doi.org/10.1594/PANGAEA.548925>

- 840 Graf, W.; Moser, H.; Oerter, H.; Reinwarth, O.; Stichler, W. (1988): Density and d₁₈O of snow pit FRI18S86_330. PANGAEA, <https://doi.org/10.1594/PANGAEA.548924>
- Graf, W.; Oerter, H. (2006): Annual means of density, d₁₈O, and accumulation rates of snow pit BER01S90_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.548700>
- Graf, W.; Oerter, H. (2006): Annual means of density, d₁₈O, and accumulation rates of snow pit BER02S90_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.548701>
- Graf, W.; Oerter, H. (2006): Annual means of density, d₁₈O, and accumulation rates of snow pit FRI12S90_236. PANGAEA, <https://doi.org/10.1594/PANGAEA.548665>
- Graf, W.; Oerter, H. (2006): Density and d₁₈O of firn core FRI02C92_246. PANGAEA, <https://doi.org/10.1594/PANGAEA.548623>
- Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI10S90_136. PANGAEA, <https://doi.org/10.1594/PANGAEA.548655>
- 850 Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI11S90_235. PANGAEA, <https://doi.org/10.1594/PANGAEA.548656>
- Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI12S90_236. PANGAEA, <https://doi.org/10.1594/PANGAEA.548657>
- Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI13S90_335. PANGAEA, <https://doi.org/10.1594/PANGAEA.548658>
- Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI15S90_131. PANGAEA, <https://doi.org/10.1594/PANGAEA.548659>
- Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI16S90_230. PANGAEA, <https://doi.org/10.1594/PANGAEA.548660>
- 855 Graf, W.; Oerter, H. (2006): Density and d₁₈O of snow pit FRI17S90_231. PANGAEA, <https://doi.org/10.1594/PANGAEA.548661>
- Graf, W.; Oerter, H. (2006): Density and deuterium of firn core FRI09C90_90. PANGAEA, <https://doi.org/10.1594/PANGAEA.548624>
- Graf, W.; Oerter, H. (2006): Density and deuterium of firn core FRI11C90_235. PANGAEA, <https://doi.org/10.1594/PANGAEA.548626>
- Graf, W.; Oerter, H. (2006): Density and deuterium of firn core FRI13C90_335. PANGAEA, <https://doi.org/10.1594/PANGAEA.548628>
- Graf, W.; Oerter, H. (2006): Density and deuterium of firn core FRI15C90_131. PANGAEA, <https://doi.org/10.1594/PANGAEA.548630>
- 860 Graf, W.; Oerter, H. (2006): Density and deuterium of firn core FRI17C90_231. PANGAEA, <https://doi.org/10.1594/PANGAEA.548632>
- Graf, W.; Oerter, H. (2006): Density, d₁₈O and deuterium of snow pit FRI18S90_330. PANGAEA, <https://doi.org/10.1594/PANGAEA.548662>
- Graf, W.; Oerter, H. (2006): Density, d₁₈O, and deuterium of firn core FRI21C90_HWF. PANGAEA, <https://doi.org/10.1594/PANGAEA.548636>
- 865 Graf, W.; Oerter, H. (2006): Density, d₁₈O, deuterium, and tritium of firn core FRI10C90_136. PANGAEA, <https://doi.org/10.1594/PANGAEA.548625>
- Graf, W.; Oerter, H. (2006): Density, d₁₈O, deuterium, and tritium of firn core FRI12C90_236. PANGAEA, <https://doi.org/10.1594/PANGAEA.548627>
- Graf, W.; Oerter, H. (2006): Density, d₁₈O, deuterium, and tritium of firn core FRI14C90_336. PANGAEA, <https://doi.org/10.1594/PANGAEA.548629>
- 870 Graf, W.; Oerter, H. (2006): Density, d₁₈O, deuterium, and tritium of firn core FRI16C90_230. PANGAEA, <https://doi.org/10.1594/PANGAEA.548631>
- Graf, W.; Oerter, H. (2006): Density, d₁₈O, deuterium, and tritium of firn core FRI18C90_330. PANGAEA, <https://doi.org/10.1594/PANGAEA.548633>
- 875 Graf, W.; Oerter, H. (2006): Density, d₁₈O, deuterium, and tritium of firn core FRI19C90_05. PANGAEA, <https://doi.org/10.1594/PANGAEA.548634>

Graf, W.; Oerter, H. (2006): Density, d18O, deuterium, and tritium of firn core FRI20C90_06. PANGAEA, <https://doi.org/10.1594/PANGAEA.548635>

880 Graf, W.; Oerter, H. (2006): High resolution density, conductivity, deuterium, and d18O of ice core FRI12C92_15. PANGAEA, <https://doi.org/10.1594/PANGAEA.548744>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML02S98_13. PANGAEA, <https://doi.org/10.1594/PANGAEA.104876>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML05C98_32 (B32). PANGAEA, <https://doi.org/10.1594/PANGAEA.104862>

885 Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML11C98_03. PANGAEA, <https://doi.org/10.1594/PANGAEA.104864>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML12C98_17. PANGAEA, <https://doi.org/10.1594/PANGAEA.104865>

890 Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML13C98_16. PANGAEA, <https://doi.org/10.1594/PANGAEA.104866>,

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML14C98_15. PANGAEA, <https://doi.org/10.1594/PANGAEA.104867>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML15C98_14. PANGAEA, <https://doi.org/10.1594/PANGAEA.104868>

895 Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML17C98_33 (B33). PANGAEA, <https://doi.org/10.1594/PANGAEA.104869>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML18C98_04. PANGAEA, <https://doi.org/10.1594/PANGAEA.104870>

900 Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML20C98_08. PANGAEA, <https://doi.org/10.1594/PANGAEA.104872>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML22C98_11. PANGAEA, <https://doi.org/10.1594/PANGAEA.104874>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Density and stable oxygen isotopes of firn core DML23C98_12. PANGAEA, <https://doi.org/10.1594/PANGAEA.104875>

905 Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Physical properties of firn core DML25C00_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.58443>

Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Physical properties of firn core DML27C00_04. PANGAEA, <https://doi.org/10.1594/PANGAEA.58445>

910 Graf, W.; Oerter, H.; Reinwarth, O.; Stichler, W.; Wilhelms, F.; Miller, H.; Mulvaney, Robert (2002): Physical properties of firn core NM03C95_06. PANGAEA, <https://doi.org/10.1594/PANGAEA.58791>

Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Annual means of density, d18O, and accumulation rates of firn core FRI23C95_16. PANGAEA, <https://doi.org/10.1594/PANGAEA.548504>

Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Annual means of density, d18O, and accumulation rates of firn core FRI26C95_13. PANGAEA, <https://doi.org/10.1594/PANGAEA.548507>

- 915 Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Annual means of density, d18O, and accumulation rates of firn core FRI29C95_10. PANGAEA, <https://doi.org/10.1594/PANGAEA.548510>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Annual means of density, d18O, deuterium, and accumulation rates of firn core FRI34C95_03. PANGAEA, <https://doi.org/10.1594/PANGAEA.548513>
- 920 Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI24C95_15. PANGAEA, <https://doi.org/10.1594/PANGAEA.548448>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI25C95_14. PANGAEA, <https://doi.org/10.1594/PANGAEA.548449>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI27C95_12. PANGAEA, <https://doi.org/10.1594/PANGAEA.548451>
- 925 Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI28C95_11. PANGAEA, <https://doi.org/10.1594/PANGAEA.548452>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI30C95_09. PANGAEA, <https://doi.org/10.1594/PANGAEA.548454>
- 930 Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI31C95_08. PANGAEA, <https://doi.org/10.1594/PANGAEA.548455>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density and d18O of firn core FRI33C95_06. PANGAEA, <https://doi.org/10.1594/PANGAEA.548457>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density, d18O, and deuterium of firn core FRI36C95_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.548460>
- 935 Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density, d18O, and deuterium of firn core FRI37C95_05. PANGAEA, <https://doi.org/10.1594/PANGAEA.548461>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density, d18O, deuterium, and tritium of firn core FRI32C95_07. PANGAEA, <https://doi.org/10.1594/PANGAEA.548456>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density, d18O, deuterium, and tritium of firn core FRI35C95_01.
- 940 PANGAEA, <https://doi.org/10.1594/PANGAEA.548459>
- Graf, W.; Reinwarth, O.; Oerter, H.; Mayer, C.; Lambrecht, A. (1999): Density, d18O, deuterium, and tritium of firn core FRI38C95_04. PANGAEA, <https://doi.org/10.1594/PANGAEA.548462>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d18O, and accumulation rates of snow pit BER01S90_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.548700>
- 945 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d18O, and accumulation rates of snow pit BER02S90_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.548701>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d18O, and accumulation rates of snow pit FRI11S90_235. PANGAEA, <https://doi.org/10.1594/PANGAEA.548664>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d18O, and accumulation rates of snow pit FRI12S90_236. PANGAEA, <https://doi.org/10.1594/PANGAEA.548665>
- 950 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d18O, and accumulation rates of snow pit FRI13S90_335. PANGAEA, <https://doi.org/10.1594/PANGAEA.548666>

- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, and accumulation rates of snow pit FRI15S90_131. PANGAEA, <https://doi.org/10.1594/PANGAEA.548667>
- 955 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, and accumulation rates of snow pit FRI16S90_230. PANGAEA, <https://doi.org/10.1594/PANGAEA.548668>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, and accumulation rates of snow pit FRI17S90_231. PANGAEA, <https://doi.org/10.1594/PANGAEA.548669>
- 960 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, and accumulation rates of firn core FRI21C90_HWF. PANGAEA, <https://doi.org/10.1594/PANGAEA.548652>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, and accumulation rates of snow pit FRI18S90_330. PANGAEA, <https://doi.org/10.1594/PANGAEA.548670>,
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI10C90_136. PANGAEA, <https://doi.org/10.1594/PANGAEA.548641>
- 965 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI12C90_236. PANGAEA, <https://doi.org/10.1594/PANGAEA.548643>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI14C90_336. PANGAEA, <https://doi.org/10.1594/PANGAEA.548645>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI16C90_230. 970 PANGAEA, <https://doi.org/10.1594/PANGAEA.548647>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI18C90_330. PANGAEA, <https://doi.org/10.1594/PANGAEA.548649>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI19C90_05. PANGAEA, <https://doi.org/10.1594/PANGAEA.548650>
- 975 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, d₁₈O, deuterium, tritium, and accumulation rates of firn core FRI20C90_06. PANGAEA, <https://doi.org/10.1594/PANGAEA.548651>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, deuterium, and accumulation rates of firn core FRI09C90_90. PANGAEA, <https://doi.org/10.1594/PANGAEA.548640>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, deuterium, and accumulation rates of firn core FRI11C90_235. PAN- 980 GAEA, <https://doi.org/10.1594/PANGAEA.548642>
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, deuterium, and accumulation rates of firn core FRI13C90_335. PANGAEA, <https://doi.org/10.1594/PANGAEA.548644>,
- Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, deuterium, and accumulation rates of firn core FRI15C90_131. PANGAEA, <https://doi.org/10.1594/PANGAEA.548646>
- 985 Graf, Wolfgang; Oerter, Hans (2006): Annual means of density, deuterium, and accumulation rates of firn core FRI17C90_231. PANGAEA, <https://doi.org/10.1594/PANGAEA.548648>
- Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d₁₈O, and accumulation rates of firn core FRI23C95_16. PANGAEA, <https://doi.org/10.1594/PANGAEA.548504>
- Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d₁₈O, and 990 accumulation rates of firn core FRI25C95_14. PANGAEA, <https://doi.org/10.1594/PANGAEA.548506>

Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, and accumulation rates of firn core FRI27C95_12. PANGAEA, <https://doi.org/10.1594/PANGAEA.548508>

Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, and accumulation rates of firn core FRI28C95_11. PANGAEA, <https://doi.org/10.1594/PANGAEA.548509>

995 Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, and accumulation rates of firn core FRI29C95_10. PANGAEA, <https://doi.org/10.1594/PANGAEA.548510>

Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, and accumulation rates of firn core FRI33C95_06. PANGAEA, <https://doi.org/10.1594/PANGAEA.548512>

1000 Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, deuterium, tritium, and accumulation rates of firn core FRI32C95_07. PANGAEA, <https://doi.org/10.1594/PANGAEA.548511>

Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, deuterium, tritium, and accumulation rates of firn core FRI35C95_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.548514>

Graf, Wolfgang; Reinwarth, Oskar; Oerter, Hans; Mayer, Christoph; Lambrecht, Astrid (1999): Annual means of density, d18O, deuterium, tritium, and accumulation rates of firn core FRI38C95_04. PANGAEA, <https://doi.org/10.1594/PANGAEA.548515>

1005 Gregory, S. A., Albert, M. R., and Baker, I.: Impact of physical properties and accumulation rate on pore close-off in layered firn, *The Cryosphere*, 8, 91–105, <https://doi.org/10.5194/tc-8-91-2014>, 2014. Data: Mary, A. 2015. Firn Permeability and Density at WAIS Divide. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/N57942NT>

Griffiths, T. M. (1960). Glaciological investigations in the TUTO area of Greenland., U. S. Army Snow Ice and Permafrost Research Establishment, Corps of Engineers, Report 47, 62 pp. <https://hdl.handle.net/11681/5981>

1010 Griffiths, T. M., Some glacial investigations in the Thule area, Greenland, Tech. rep., 1961.

HAMMES, D.F. ; SIMOES, J. C. ; CERON, M. S. ; REIS DOS SANTOS, M. A. ; VIEIRA, R. . Analisis geoquimico de testigos de hielo provenientes de travesia antartica-resultados preliminares. *Boletin de geologia*, v.31, p. 1-10, 2009

Hammer, C U; Dahl-Jensen, Dorthe (1999): GRIP Accumulation Rates. PANGAEA, <https://doi.org/10.1594/PANGAEA.55084>

1015 Hammer, C. U., H. B. Clausen, and C. C. Langway (1994), Electrical conductivity method (ECM) stratigraphic dating of the Byrd Station ice core, Antarctica, *Ann. Glaciol.*, 20, 115–120.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Hanna and Coauthors, 2011: Greenland Ice Sheet surface mass balance 1870 to 2010 based on twentieth century reanalysis, and links with global climate forcing. *J. Geophys. Res.*, 116, D24121, <https://doi.org/10.1029/2011JD016387>.

1020 Hanna, E.P., J. McConnell, S. Das, J. Cappelen, and A. Stephens, 2006: Observed and modelled Greenland Ice Sheet snow accumulation, 1958–2003, and links with regional climate forcing. *J. Climate*, 19, 344–358.

Harper, J. T., N. Humphrey, W. T. Pfeffer, J. Brown, and X. Fettweis (2012), Greenland ice-sheet contribution to sea-level rise buffered by meltwater storage in firn., *Nature*, 491(7423), 240–3, <https://doi.org/10.1038/nature11566>.

1025 Harper, J., Humphrey, N. (2023). Firn core density and ice content at sites along the lower Expéditions Glaciologiques Internationales au Groenland (EGIG) line, Western Greenland, 2023. Arctic Data Center. <https://doi.org/10.18739/A2DB7VR82>.

Harper, J., and Humphrey, N. (2022). Firn density and ice content at sites along the west Expéditions Glaciologiques Internationales au Groenland (EGIG) line, Greenland, 2022. Arctic Data Center. <https://doi.org/10.18739/A2KH0F10F>.

- Harper, J., and Humphrey, N. (2023). Firn density and ice content at sites along the west EGIG line, Greenland, 2018 and 2019. Arctic Data Center. <https://doi.org/10.18739/A2QB9V701>.
- 1030 Harrington Joel A. Humphrey Neil F. Harper Joel T.: Temperature distribution and thermal anomalies along a flowline of the Greenland ice sheet Annals of Glaciology 56(70) 98?104 2015 10.3189/2015AoG70A945
- Hastings, M. and Dibb, J. (2017) Personal Communication
- Hawley, R. L., Z. R. Courville, L. M. Kehrl, E. R. Lutz, E. C. Osterberg, T. B. Overly, G. J. Wong. 2014. Recent Accumulation Variability in Northwest Greenland from GPR and Shallow Cores Along the Greenland Inland Traverse. Journal of Glaciology. 60(220), 60, <https://doi.org/10.3189/2014JoG13J141>.
- Heilig, A., Eisen, O., MacFerrin, M., Tedesco, M., and Fettweis, X.: Seasonal monitoring of melt and accumulation within the deep percolation zone of the Greenland Ice Sheet and comparison with simulations of regional climate modeling. The Cryosphere, 12, 1851–1866, <https://doi.org/10.5194/tc-12-1851-2018>, 2018.
- 1040 Hermann, M., Box, J. E., Fausto, R. S., Colgan, W. T., Langen, P. L., Mottram, R., et al. (2018). Application of PROMICE Q-transect in situ accumulation and ablation measurements (2000–2017) to constrain mass balance at the southern tip of the Greenland ice sheet. Journal of Geophysical Research: Earth Surface, 123, 1235–1256. <https://doi.org/10.1029/2017JF004408>
- Heuberger J.-C. 1954. Expéditions Polaires Françaises: Missions Paul-Emil Victor. Glaciologie Groenland Volume 1: Forages sur l'inlandsis. Hermann and Cle Éditeurs. Paris.
- Heuberger, Jean-Charles (1954) Groenland, glaciologie, Vol. I, Forages sur L'inlandsis (Greenland, glaciology, vol. I, Borehole studies on the ice cap). Paris: Hermann and Cle, Editeurs.
- 1045 Higham, H., Craven, C., Ruddell, R., Allison, A.: Snow-accumulation distribution in the interior of the Lambert Glacier basin, Antarctica, Annals of Glaciology, <https://www.cambridge.org/core/journals/annals-of-glaciology/article/snowaccumulation-distribution-in-the-interior-of-the-lambert-glacier-basin/5341BB15BBDB86D07A4CB628B1A995BF>, 1997.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1050 Hills, B. H., Harper, J. T., Humphrey, N. F., and Meierbachtol, T. W. (2017). Measured horizontal temperature gradients constrain heat transfer mechanisms in Greenland ice. Geophysical Research Letters, 44. <https://doi.org/10.1002/2017GL074917>; Data: <https://doi.org/10.18739/A24746S04>
- Hills, B. H., Harper, J. T., Meierbachtol, T. W., Johnson, J. V., Humphrey, N. F., and Wright, P. J.: Processes influencing heat transfer in the near-surface ice of Greenlands ablation zone, The Cryosphere, 12, 3215–3227, <https://doi.org/10.5194/tc-12-3215-2018>, 2018. data: <https://doi.org/10.18739/A2QV3C418>
- 1055 Hoffmann, K., Fernandoy, F., Meyer, H., Thomas, E. R., Aliaga, M., Tetzner, D., Freitag, J., Opel, T., Arigony-Neto, J., Göbel, C. F., Jaña, R., Rodríguez Oroz, D., Tuckwell, R., Ludlow, E., McConnell, J. R., and Schneider, C.: Stable water isotopes and accumulation rates in the Union Glacier region, Ellsworth Mountains, West Antarctica, over the last 35 years, The Cryosphere, 14, 881–904, <https://doi.org/10.5194/tc-14-881-2020>, 2020.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1060 Hofstede, C. M., van de Wal, R. S. W., Kaspers, K. A., van den Broeke, M. R., Karlöf, L., Winther, J. G., Isaksson, E., Lapeggard, G., Mulvaney, R., Oerther, H., and Wilhelms, F.: Firn accumulation records for the past 1000 years on the basis of dielectric profiling of six firn cores from Dronning Maud Land, Antarctica, J. Glaciol., 50, 279–291, <https://doi.org/10.3189/172756504781830169>, 2004.. As in: Wang,

Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Holmlund, H., Gjerde, G., Gundestrup, G.: Spatial gradients in snow layering and 10 m temperatures at two EPICA-Dronning Maud Land

1070 (Antarctica) pre-site-survey drill sites, *Annals of...*, <https://www.cambridge.org/core/journals/annals-of-glaciology/article/spatial-gradients-in-snow-layering-at-the-epica-dronning-maud-land-drill-sites> A3E898F90977BB9D0FE94954E0D3656C, 2000.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Hou, H., Li, L., Xiao, X., Ren, R.: Recent accumulation rate at Dome A, Antarctica, *Chinese Science Bulletin*, <https://link.springer.com/article/10.1007/s11434-007-0041-3>, 2007.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

How, P.; Abermann, J.; Ahlstrøm, A.P.; Andersen, S.B.; Box, J. E.; Citterio, M.; Colgan, W.T.; Fausto. R.S.; Karlsson, N.B.; Jakobsen, J.; Langley, K.; Larsen, S.H.; Mankoff, K.D.; Pedersen, A.Ø.; Rutishauser, A.; Shield, C.L.; Solgaard, A.M.; van As, D.; Vandecrux, B.; Wright, P.J., 2022, "PROMICE and GC-Net automated weather station data in Greenland", <https://doi.org/10.22008/FK2/IW73UU>, GEUS Dataverse, V9

Hubbard, B., Tison, J.L., Philippe, M., Heene, B., Pattyn, F., Malone, T. and Freitag, J., 2013. Ice shelf density reconstructed from optical televiewer borehole logging. *Geophysical research letters*, 40(22), pp.5882-5887. <https://doi.org/10.1002/2013GL058023>

Humphrey, N. F., Harper, J. T., and Pfeffer, W. T. (2012), Thermal tracking of meltwater retention in Greenlands accumulation area, *J. Geophys. Res.*, 117, F01010, <https://doi.org/10.1029/2011JF002083>. Data available at: <https://instaar.colorado.edu/research/publications/occasional-papers/firn-stratigraphy-and-temperature-to-10-m-depth-in-the-percolation-zone-of/>

Hynek, B., G. Weyss, D. Binder, and W. Schöner, Mass balance of Freya glacier, Greenland since 2007/2008, <https://doi.org/10.1594/PANGAEA.831035>, 2014b.

Igarashi, I., Nakai, N., Motizuki, M., Takahashi, T.: Dating of the Dome Fuji shallow ice core based on a record of volcanic eruptions from 1090 AD 1260 to AD 2001, *Polar Science*, <https://doi.org/10.1016/j.polar.2011.08.001>, 2011.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Iizuka, Y. , Matoba, S. , Yamasaki, T. , Oyabu, I. , Kadota, M. , and Aoki, T. , 2016: Glaciological and meteorological observations at the SE-Dome site, southeastern Greenland Ice Sheet. *Bulletin of Glaciological Research* , 34: 1–10: doi <http://dx.doi.org/10.5331/bgr.15R03> . Data: Kawakami, K.; Iizuka, Y. (2023-08-11): NOAA/WDS Paleoclimatology - SE-Dome II Ice Core, South Eastern Greenland Accumulation Rate, Melt Crust and Feature, H₂O₂ and Tritium Concentration, Bulk Density and Electrical Conductivity Data from 1800 to 2020 CE. [indicate subset used]. NOAA National Centers for Environmental Information. <https://doi.org/10.25921/bx51-ng14>.

Iizuka, Y., Matoba, S., Yamasaki, T., Oyabu, I., Kadota, M., Aoki, T., n.d. Glaciological and meteorological observations at the SE-Dome site , southeastern Greenland Ice Sheet.

1100 Isaksson, E., W. Karlén, N. Gundestrup, P. Mayewski, S. Whitlow, and M. Twickler (1996), A century of accumulation and temperature changes in Dronning Maud Land, Antarctica, *J. Geophys. Res.*, 101(D3), 7085–7094, <https://doi.org/10.1029/95JD03232>.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass

balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- 1105 Isaksson, E., Karlén, W. High resolution climatic information from short firn cores, western Dronning Maud Land, antarctica. *Climatic Change* 26, 421–434 (1994). <https://doi.org/10.1007/BF01094405>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Isaksson, E., and Karlén, W. (1994). Spatial and temporal patterns in snow accumulation, western Dronning Maud Land, Antarctica. *Journal of Glaciology*, 40(135), 399–409. <https://doi.org/10.3189/S002214300007486>
- Isaksson, E., van den Broeke, M., Winther, J., Karlöf, L., Pinglot, J., and Gundestrup, N.: Accumulation and proxytemperature variability in Dronning Maud Land, Antarctica, determined from shallow firn cores, *Ann. Glaciol.*, 29, 17–22, <https://doi.org/10.3189/172756499781821445>, 1999.. . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletlonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Isaksson, E., van den Broeke, M., Winther, J., Karlöf, L., Pinglot, J., and Gundestrup, N.: Accumulation and proxytemperature variability in Dronning Maud Land, Antarctica, determined from shallow firn cores, *Ann. Glaciol.*, 29, 17–22, <https://doi.org/10.3189/172756499781821445>, 1999.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Jezek, K.C. 2012. Surface Elevation and Velocity Changes on the South Central Greenland Ice Sheet: 1980-2011 - Data Summary. BPRC Technical Report No. 2012-01, Byrd Polar Research Center, The Ohio State University, Columbus, Ohio, 28 pages plus the data summary document.
- Johnsen, S. (1994), personal communication
- 1125 Jones, T. R., White, J. W. C., and Popp, T.: Siple Dome shallow ice cores: a study in coastal dome microclimatology, *Clim. Past*, 10, 1253–1267, <https://doi.org/10.5194/cp-10-1253-2014>, 2014. Data from: Lamorey, G. W. (2003) "Siple Shallow Core Density Data" U.S. Antarctic Program (USAP) Data Center. <https://doi.org/https://doi.org/10.7265/N52F7KCD>.
- Jouzel, J., L. Merlivat, J. R. Petit, and C. Lorius, Climatic information over the last century deduced from a detailed isotopic record in the South Pele snow, *J. Geophys. Res.*, 88, 2693–2703, 1983. . As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Jung-Rothenhäusler, F., H. Oerter, C. Bøggild, and N. Reeh, Glaciological fieldwork on Storstrømmen glacier results 1994, in Report of the 5th Workshop on Mass balance and related topics of the Greenland ice sheet, Grønlands Geologisk Undersøgelse, vol. 95, edited by F. Obleitner and O. B. Olesen, 1995.
- 1135 Jülg, H. Dichtebestimmungen und Schneesondierung auf der Route 1–400 km. Deutsche Grönland-Expedition Alfred Wegener 1929 und 1930/31. *Wissenschaftliche Ergebnisse* vol. 4.2, 329–345 (1939)
- Kaczmarska M, Isaksson E, Karlöf L, et al. Accumulation variability derived from an ice core from coastal Dronning Maud Land, Antarctica. *Annals of Glaciology*. 2004;39:339–345. <https://doi.org/10.3189/172756404781814186>. . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletlonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D.

- 1140 A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Kameda, T. et al. Melt features in ice cores from Site J, southern Greenland: some implications for summer climate since AD 1550. Ann. Glaciol. 21, 51–58 (1995).
- Kameda, T., Motoyama, H., Fujita, S., and Takahashi S.: Temporal and spatial variability of surface mass balance at Dome Fuji, East Antarctica, by the stake method from 1995 to 2006, J. Glaciol., 54, 107–116, 2008. and Motoyama et al., 2016. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Kameda, T., Motoyama, H., Fujita, S., and Takahashi S.: Temporal and spatial variability of surface mass balance at Dome Fuji, East Antarctica, by the stake method from 1995 to 2006, J. Glaciol., 54, 107–116, 2008.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Kamiyama, K., Ageta, A., Fujii, F.: Atmospheric and depositional environments traced from unique chemical compositions of the snow over an inland high plateau, Antarctica, J. Geophys. Res., 94(D15), 18515–18519, <https://doi.org/10.1029/JD094iD15p18515>.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Karlsson, Nanna Bjørnholt; Eisen, Olaf; Dahl-Jensen, Dorthe; Freitag, Johannes; Kipfstuhl, Sepp; Lewis, Cameron; Nielsen, Lisbeth T; Paden, John D; Winter, Anna; Wilhelms, Frank (2016): Accumulation rates. PANGAEA, <https://doi.org/10.1594/PANGAEA.868447>,
- Karlöf, L., Isaksson, E., Winther, J.-G., Gundestrup, N., Meijer, H. A. J., Mulvaney, R., ... Van De Wal, R. S. W. (2005). Accumulation variability over a small area in east Dronning Maud Land, Antarctica, as determined from shallow firn cores and snow pits: some implications for ice-core records. Journal of Glaciology, 51(174), 343–352. <https://doi.org/10.3189/172756505781829232>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Karlöf, L., et al. (2000), A 1500 year record of accumulation at Amundsenisen western Dronning Maud Land, Antarctica, derived from electrical and radioactive measurements on a 120 m ice core, J. Geophys. Res., 105(D10), 12471–12483, <https://doi.org/10.1029/1999JD901119>.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Kaspari, S., Mayewski, P. A., Dixon, D. A., Spikes, V. B., Snead, S. B., Handley, M. J., and Hamilton, G. S.: Climate variability in West Antarctica derived from annual accumulation-rate records from ITASE firn/ice cores, Ann. Glaciol., 39, 585–594, <https://doi.org/10.3189/172756404781814447>, 2004.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Keegan, K. (2018). North Greenland Eemian Ice Drilling (NEEM) 2009 S2 Firn Core Density and Permeability. Arctic Data Center. <https://doi.org/10.18739/A2SX64931>.
- Khodzher, K., Golobokova, G., Osipov, O.: Spatial-temporal dynamics of chemical composition of surface snow in East Antarctica along the Progress station–Vostok station transect, The Cryosphere, <https://tc.copernicus.org/articles/8/931/2014/>, 2014.. As in: Wang, Y., Ding,

M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1180 Kjær, H. A., Zens, P., Edwards, R., Olesen, M., Mottram, R., Lewis, G., Terkelsen Holme, C., Black, S., Holst Lund, K., Schmidt, M., Dahl-Jensen, D., Vinther, B., Svensson, A., Karlsson, N., Box, J. E., Kipfstuhl, S., and Vallelonga, P.: Recent North Greenland temperature warming and accumulation, *The Cryosphere Discuss. [preprint]*, <https://doi.org/10.5194/tc-2020-337>, 2021.

Kjær, Helle Astrid; Hauge, Lisa Lolk; Simonsen, Marius; Yoldi, Zurine; Koldtoft, Iben; Hørhold, Maria; Freitag, Johannes; Kipfstuhl, Sepp; Svensson, Anders M; Vallelonga, Paul T (2021): Accumulation of snow as determined by the summer hydrogen peroxide peak measured using the LISA box for several sites in northern Greenland. PANGAEA, <https://doi.org/10.1594/PANGAEA.935333>,

1185 Koch, Johann P., and Alfred Wegener. Wissenschaftliche Ergebnisse Der Dänischen Expedition Nach Dronning Louises-Land Und Quer über Das Inlandeis Von Nordgrönland 1912 - 13 Unter Leitung Von Hauptmann J. P. Koch : 1 (1930). 1930.

Koenig, L. S., Ivanoff, A., et al.: Annual Greenland accumulation rates (2009–2012) from airborne snow radar, *The Cryosphere*, 10, 1739–1752, <https://doi.org/10.5194/tc-10-1739-2016>, 2016.

1190 Koenig, L., C. Miege, R. R. Forster, and L. Brucker. (2014). Greenland Firn Aquifer core (FA13) densities - Initial in situ measurements of perennial meltwater storage in the Greenland firn aquifer *Geophysical Research Letters*. 10.1002/2013GL058083.

Koide, K., Michel, M., Goldberg, G., Herron, H.: Depositional history of artificial radionuclides in the Ross Ice Shelf, Antarctica, Earth and Planetary . . . , <https://www.sciencedirect.com/science/article/pii/0012821X79901699>, 1979.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over

1195 the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Kojima, K., 1964. Densification of Snow in Antarctica. *Antarctic Snow and Ice Studies, Antarc Res. Ser.*, vol. 2, 157-218, AGU.

Konrad,H. , A. E. Hogg, R. Mulvaney, R. Arthern, R. J. Tuckwell, B. Medley, A. Shepherd, 2019. Observations of surface mass balance on Pine Island Glacier, West Antarctica, and the effect of strain history in fast-flowing sections. *J Glaciol*, in press. <https://doi.org/10.1017/jog.2019.36>

1200 Kreutz, K., B. Koffman, D. Breton, and G. Hamilton. 2011. Microparticle, Conductivity, and Density Measurements from the WAIS Divide Deep Ice Core, Antarctica. [WDC06A_rho_clen.txt]. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/N5K07264>.

Kreutz, K., Mayewski, M., Pittalwala, P.: Sea level pressure variability in the Amundsen Sea region inferred from a West Antarctic glaciochemical record, *Journal of . . .*, <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/1999JD901069>, 2000.. As in: Wang, Y., Ding,

1205 M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Kuhlman, H., Weather and ablation observations at Sermikavssak in Umanak district, *Meddelelser om Grønland*, 158(5), 21–50, 1959.

Kusunoki K., and Y. Suzuki 1978. Series: Memoirs of National Institute of Polar Research. Special issue, no. 10. Tokyo, National Institute of Polar Research, 172 pp.

1210 LaChapelle, E., Ablation studies in the Mint Julep area, southwest Greenland, in Project Mint Julep, *Investigation of Smooth Ice Areas of the Greenland Ice Cap, 1953 Part II Special Scientific Reports, Air University (U.S.). Arctic, Desert, and Tropic Information Center*, 1955.

Langway, C. C., Jr. (1961) Accumulation and temperature on the inland ice of North Greenland, 1959, *Journal of Glaciology*, vol. 3, no. 30, p. 1017-1044.

1215 Langway, L., Osada, O., Clausen, C., Hammer, H.: New chemical stratigraphy over the last millennium for Byrd Station, Antarctica, *Tellus B*, <https://onlinelibrary.wiley.com/doi/abs/10.1034/j.1600-0889.1994.00004.x>, 1994.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P.

C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Larue, F., Picard, G., Aublanc, J., Arnaud, L., Robledano-Perez, A., Meur, E. L., Favier, V., Jourdain, B., Savarino, J., and Thibaut, P. (2021). Radar altimeter waveform simulations in Antarctica with the Snow Microwave Radiative Transfer Model (SMRT). *Remote Sensing of Environment*, 263, 112534. <https://doi.org/10.1016/j.rse.2021.112534>. Data: Picard, G., Löwe, H., Arnaud, L., Larue, F., Favier, V., Le Meur, E., Lefebvre, E., Savarino, J., Royer, A. Krol, Q. , Jourdain, B. (2022) Snow properties in Antarctica, Canada and the Alps for microwave emission and backscatter modeling [Data set]

Laternser, M., 1994 Firn temperature measurements and snow pit studies on the EGIG traverse of central Greenland, 1992. Eidgenössische Technische Hochschule. Versuchsanstalt für Wasserbau Hydrologie und Glaziologie. (Arbeitsheft 15).

Law, R., Christoffersen, P., Hubbard, B., Doyle, S.H., Chudley, T.R., Schoonman, C.M., Bougamont, M., des Tombe, B., Schilperoort, B., Kechavarzi, C. and Booth, A., 2021. Thermodynamics of a fast-moving Greenlandic outlet glacier revealed by fiber-optic distributed temperature sensing. *Science Advances*, 7(20), p.eabe7136. <https://doi.org/10.1126/sciadv.abe713>

Legrand, M. R., Delmas, R. J.. 1985. Spatial and temporal variations of snow chemistry in Terre Adélie East Antarctica., *Ann. Glaciol.*, 7. 20 25. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Lewis, G., Osterberg, E., Hawley, R., Marshall, H. P., Meehan, T., Graeter, K., McCarthy, F., Overly, T., Thundercloud, Z. and Ferris, D. (2019) Recent precipitation decrease across the western Greenland ice sheet percolation zone, *Cryosph.*, 13(11), 2797–2815, <https://doi.org/10.5194/tc-13-2797-2019>

Lewis, G., Osterberg, E., Hawley, R., Marshall, H. P., Meehan, T., Graeter, K., McCarthy, F., Overly, T., Thundercloud, Z. and Ferris, D., 2019, Recent precipitation decrease across the western Greenland ice sheet percolation zone, *Cryosph.*, 13(11), 2797–2815, <https://doi.org/10.5194/tc-13-27972019>

Lewis, G., Osterberg, E., Hawley, R., Marshall, H. P., Meehan, T., Graeter, K., McCarthy, F., Overly, T., Thundercloud, Z. and Ferris, D.: Recent precipitation decrease across the western Greenland ice sheet percolation zone, *Cryosph.*, 13(11), 2797–2815, <https://doi.org/10.5194/tc-13- 2797-2019>, 2019.

Lewis, G., Osterberg, E., Hawley, R., Whitmore, B., Marshall, H. P., and Box, J.: Regional Greenland accumulation variability from Operation IceBridge airborne accumulation radar, *The Cryosphere*, 11, 773–788, <https://doi.org/10.5194/tc-11-773-2017>, 2017.

Loewe, F., and K. Wegener, Die Schneepiegelbeobachtungen, in *Wissenschaftliche Ergebnisse der deutschen Grönland-Expedition Alfred Wegener 1929 und 1930/31, Band I, Geschichte der Expedition*, edited by K. Wegener im Auftrag der Notgemeinschaft der Deutschen Wissenschaft, Brockhaus, Leipzig, 1933.

Long, W. E., 1961. Glaciology, Byrd Station and Marie Byrd Land Traverse, 1958-1959. Report 825-2 Part XI, USNC-IGY Antarctic Glaciological Data Feild Work 1958-1959, The Ohio State Univ. Res. Found.

Lorius, C., et al. (1968), Dating of firn layers in Antarctica: Application to the determination of the rate of snow accumulation, paper presented at International Symposium on Antarctic Glaciological Expedition, Int. Counc. of Sci. Unions, Hanover, N. H., 3 – 7 Sept.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

MacFerrin, M. J., Stevens, C. M., Vandecrux, B., Waddington, E. D., and Abdalati, W. (2022) The Greenland Firn Compaction Verification and Reconnaissance (FirnCover) dataset, 2013–2019, *Earth Syst. Sci. Data*, 14, 955–971, <https://doi.org/10.5194/essd-14-955-2022>,

1255 MacFerrin, M. J., Stevens, C. M., Vandecrux, B., Waddington, E. D., and Abdalati, W., 2022, The Greenland Firn Compaction Verification and Reconnaissance (FirnCover) dataset, 2013–2019, *Earth Syst. Sci. Data*, 14, 955–971, <https://doi.org/10.5194/essd-14-955-2022>

MacFerrin, M., Machguth, H., As, D.v. et al. Rapid expansion of Greenland's low-permeability ice slabs. *Nature* 573, 403–407 (2019). <https://doi.org/10.1038/s41586-019-1550-3>

1260 Machguth, H., Thomsen, H.H., Weidick, A., Ahlstrøm, A.P., Abermann, J., Andersen, M.L., Andersen, S.B., Bjørk, A.A., Box, J.E., Braithwaite, R.J. and Bøggild, C.E., 2016. Greenland surface mass-balance observations from the ice-sheet ablation area and local glaciers. *Journal of Glaciology*, 62(235), pp.861-887. <https://doi.org/10.1017/jog.2016.75>

Machguth, Horst, Mike MacFerrin, Dirk van As, et al. 2016. Greenland Meltwater Storage in Firn Limited by Near-Surface Ice Formation. *Nature Climate Change* 6: 390.

1265 Magand et al., 2004; Frezzotti, M., Urbini, S., Proposito, M., Scarchilli, C., and Gandolfi, S.: Spatial and temporal variability of surface mass balance near Talos Dome, East Antarctica, *J. Geophys. Res.*, 112, F02032, <https://doi.org/10.1029/2006JF000638>, 2007. and Frezzotti, M., Urbini, S., Proposito, M., Scarchilli, C., and Gandolfi, S.: Spatial and temporal variability of surface mass balance near Talos Dome, East Antarctica, *J. Geophys. Res.*, 112, F02032, <https://doi.org/10.1029/2006JF000638>, 2007.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1270 Magand et al., 2005; Frezzotti, M., Urbini, S., Proposito, M., Scarchilli, C., and Gandolfi, S.: Spatial and temporal variability of surface mass balance near Talos Dome, East Antarctica, *J. Geophys. Res.*, 112, F02032, <https://doi.org/10.1029/2006JF000638>, 2007. and Frezzotti, M., Urbini, S., Proposito, M., Scarchilli, C., and Gandolfi, S.: Spatial and temporal variability of surface mass balance near Talos Dome, East Antarctica, *J. Geophys. Res.*, 112, F02032, <https://doi.org/10.1029/2006JF000638>, 2007.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1275 Magand, M., Frezzotti, F., Pourchet, P., Stenni, S.: Climate variability along latitudinal and longitudinal transects in East Antarctica, *Annals of ...*, <https://www.cambridge.org/core/journals/annals-of-glaciology/article/climate-variability-along-latitudinal-and-longitudinal-transects-in-east-antarctica/FC7B2B28844A8272E639D1C5B57AD6F1>, 2004.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1280 Magand, O., C. Genthon, M. Fily, G. Krinner, G. Picard, M. Frezzotti, and A. A. Ekaykin (2007), An up-to-date quality-controlled surface mass balance data set for the 90°–180°E Antarctica sector and 1950–2005 period, *J. Geophys. Res.*, 112, D12106, <https://doi.org/10.1029/2006JD007691>.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Magand, O., Frezzotti, M., Pourchet, M., Stenni, B., Genoni, L., and Fily, M. (2004). Climate variability along latitudinal and longitudinal transects in East Antarctica. *Annals of Glaciology*, 39, 351-358. <https://doi.org/10.3189/172756404781813961>

Maggi, V., Orombelli, G., Stenni, ___, Flora, O., Udisti, R., Becagli, S., . . . Petit, J. (1998). 70 years of northern Victoria Land (Antarctica) accumulation rate. *Annals of Glaciology*, 27, 215-219. <https://doi.org/10.3189/1998AoG27-1-215-219>

- 1290 Marcher, A., Simäes, J. C., Bernardo, R. T., Aquino, F. E., Thoen, I. U., Valente, P. T., et al. (2022). The stable water isotopes and snow accumulation from Weddell Sea sector imprint the large-scale atmospheric circulation variability. *The Cryosphere Discussions*, 1-51. <https://doi.org/10.5194/tc-2022-161>
- 1295 Marques, M. de M., Peralba, M. do C. R., Simoes, J. C., Bernardo, R. T., Snead, S. B., and Casassa, G. (2014). Analysis of an Antarctic ice core by ion chromatography (Mg²⁺, Na⁺, Cl⁻, and SO₄²⁻ content). *Geochimica Brasiliensis* 28(1). 86-96. <https://doi.org/10.22456/1807-9806.108585>
- Marquette, L., Kaspari, S., and Simoes, J. C. (2020). Refractory black carbon (rBC) variability in a 47-year West Antarctic snow and firn core. *The Cryosphere* 14, 1537-1554. <https://doi.org/10.5194/tc-14-1537-2020>
- Martin, P.J., and D.A. Peel, 1978. The Spatial Distribution of 10 m Temperatures in the Antarctic Peninsula. *J. of Glaciol.*, 20(83), 311-317.
- Matoba, S., Motoyama, H., Fujita, K., Yamasaki, T., Minowa, M., Onuma, Y., Komuro, Y., Aoki, T., Yamaguchi, S., Sugiyama, S., Enomoto, H., 2015. Glaciological and meteorological observations at the SIGMA-D site, northwestern Greenland Ice Sheet. *Bull. Glaciol. Res.* 33, 7–14. <https://doi.org/10.5331/bgr.33.7>
- Mayewski, P. A. and Dixon, D. A.: U.S. International Trans Antarctic Scientific Expedition (US ITASE) glaciochemical data, version 2. National Snow and Ice Data Center, accessed: 5 January 2015, <https://doi.org/10.7265/N51V5BXR>, 2013.. . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Mayewski, P. A. and Dixon, D. A.: U.S. International Trans Antarctic Scientific Expedition (US ITASE) glaciochemical data, version 2. National Snow and Ice Data Center, accessed: 5 January 2015, <https://doi.org/10.7265/N51V5BXR>, 2013.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Mayewski, P., 1998, Newall Glacier Ice Core Data. International Ice Core Data Cooperative. IGBP Pages/World Data Center-A for Paleoclimatology, NOAA/NGDC Paleoclimatology Program, Boulder CO, USA.
- Mayewski, P., Legrand, M. Recent increase in nitrate concentration of Antarctic snow. *Nature* 346, 258–260 (1990). <https://doi.org/10.1038/346258a0>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Mayewski, P.A. and Whitlow, S. 2016. Regional Survey of Greenland, 1988 - Snow Pit Data. NSF Arctic Data Center. <https://doi.org/10.5065/D6154F6J>.
- Mayewski, P.A. and Whitlow, S. 2016. Snow Pit Data from Greenland Summit, 1987. NSF Arctic Data Center. <https://doi.org/10.5065/D63X84RQ>.
- Mayewski, P.A. and Whitlow, S. 2016. Snow Pit Data from Greenland Summit, 1989 to 1993. NSF Arctic Data Center. <https://doi.org/10.5065/D6NP22KX>.
- Mayewski, P.A. and Whitlow, S. 2016. Snow Pit and Ice Core Data from Southern Greenland, 1984. NSF Arctic Data Center. <https://doi.org/10.5065/D6S180MH>.
- Mayewski, P.A., Twickler, M.S., Lyons, W.B., Spencer, M.J., Meese, D., Gow, A., Grootes, P., Sowers, T., Watson, S., and Saltzman, E., 1990, The Dominion Range ice core, Queen Maud Mountains, Antarctica - General site and core characteristics with implications, *Journal of Glaciology*, 36(122): 11-16. https://digitalcommons.library.umaine.edu/ers_facpub/264

- McConnell, J. R., Bales, R. C., and Davis, D. R. (1997). Recent intra-annual snow accumulation at South Pole: Implications for ice core interpretation. *Journal of Geophysical Research*, 102(D18), 21947–21954. <https://doi.org/10.1029/97jd00848>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- McCrae,, I.R. 1984. A summary of glaciological measurements made between 1960 and 1984 on the McMurdo Ice Shelf, Antarctica. Auckland, New Zealand, University of Auckland, School of Engineering. Department of Theoretical and Applied Mechanics. (Report 360.). As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Medley, B et al. (2013). Airborne-radar and ice-core observations of annual snow accumulation over Thwaites Glacier, West Antarctica confirm the spatiotemporal variability of global and regional atmospheric models. *Geophysical Research Letters*, 40(14), 3649– 3654
- Medley, B et al. (2013). Airborne-radar and ice-core observations of annual snow accumulation over Thwaites Glacier, West Antarctica confirm the spatiotemporal variability of global and regional atmospheric models. *Geophysical Research Letters*, 40(14), 3649–3654. <https://doi.org/10.1002/grl.50706>
- Medley, M., Joughin, J., Smith, S., Das, D., Steig, S.: Constraining the recent mass balance of Pine Island and Thwaites glaciers, West Antarctica, with airborne observations of snow accumulation, *The Cryosphere*, <https://tc.copernicus.org/articles/8/1375/2014/>, 2014.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Meier, M. F., Conel, J. E., Hoerni, J. A., Melbourne, W. G., and Pings, C. J. (1957). Preliminary Study of Crevasse Formation. Blue Ice Valley, Greenland, 1955. OCCIDENTAL COLL LOS ANGELES CALIF. <https://hdl.handle.net/11681/6029>
- Melvold, K. (1999). Impact of recent climate on glacier mass balance : studies on Kongsvegen, Svalbard and Jutulstraumen, Antarctica. University of Oslo.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Melvold, M., Hagen, H., Pinglot, P.: Large spatial variation in accumulation rate in Jutulstraumen ice stream, Dronning Maud Land, Antarctica, *Annals of ...*, <https://www.cambridge.org/core/journals/annals-of-glaciology/article/large-spatial-variation-in-accumulation-rate-in-jutulstraumen> 5D18FD5651C8B9A59F2112ADD650905, 1998.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Meyerson, E. A., P. A. Mayewski, K. J. Kreutz, L. D. Meeker, S. I. Whitlow, and M. S. Twickler (2002), The polar expression of ENSO and sea-ice variability as recorded in a South Pole ice core, *Ann. Glaciol.*, 35, 430–436.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Miller, H.; Schwager, H. (2000): Density of ice core ngt37C95.2 from the North Greenland Traverse. <https://doi.org/10.1594/PANGAEA.57798>
- Miller, H.; Schwager, H. (2000): Density of ice core ngt42C95.2 from the North Greenland Traverse. <https://doi.org/10.1594/PANGAEA.57655>

Miller, Heinz; Schwager, Matthias (2000): Accumulation rate and stable oxygen isotope ratios of ice core ngt14C93.2 from the North Greenland Traverse. PANGAEA, <https://doi.org/10.1594/PANGAEA.57158>

Miller, Heinz; Schwager, Matthias (2000): Accumulation rate and stable oxygen isotope ratios of ice core ngt27C94.2 from the North Greenland Traverse. PANGAEA, <https://doi.org/10.1594/PANGAEA.57291>

1370 Miller, Heinz; Schwager, Matthias (2000): Accumulation rate and stable oxygen isotope ratios of ice core ngt37C95.2 from the North Greenland Traverse. PANGAEA, <https://doi.org/10.1594/PANGAEA.57297>

Miller, Heinz; Schwager, Matthias (2000): Accumulation rate and stable oxygen isotope ratios of ice core ngt42C95.2 from the North Greenland Traverse. PANGAEA, <https://doi.org/10.1594/PANGAEA.57654>

1375 Miller, Heinz; Schwager, Matthias (2004): Accumulation rate and stable oxygen isotope ratios of ice core ngt03C93.2 from the North Greenland Traverse. PANGAEA, <https://doi.org/10.1594/PANGAEA.218274>

Miller, O., Solomon, D.K., Miège, C., Koenig, L., Forster, R., Schmerr, N., Ligtenberg, S.R., Legchenko, A., Voss, C.I., Montgomery, L. and McConnell, J.R., 2020. Hydrology of a perennial firn aquifer in Southeast Greenland: an overview driven by field data. Water Resources Research, 56(8), p.e2019WR026348. Dataset <https://doi.org/10.18739/A2R785P5W>

1380 Miller, O., Solomon, D.K., Miège, C., Koenig, L., Forster, R., Schmerr, N., Ligtenberg, S.R.M., Montgomery, L., 2018. Direct Evidence of Meltwater Flow Within a Firn Aquifer in Southeast Greenland. Geophysical Research Letters 45, 207–215. <https://doi.org/10.1002/2017GL075707>

Minghu, D., Cunde, X., Yuansheng, L., Jiawen, R., Shugui, H., Bo, J., Bo, S., 2011. Spatial variability of surface mass balance along a traverse route from Zhongshan station to Dome A, Antarctica. Journal of Glaciology 57, 658–666. <https://doi.org/10.3189/002214311797409820>

1385 Miège, C., Forster, R. R., Box, J. E., Burgess, E. W., McConnell, J. R., Pasteris, D. R., and Spikes, V. B. (2013). Southeast Greenland high accumulation rates derived from firn cores and ground-penetrating radar. Annals of Glaciology, 54(63), 322–332. <https://doi.org/10.3189/2013AoG63A358>. Data: Clement Miege, Richard R Forster, Jason E Box, Evan W Burgess, Joe R McConnell, Daniel R Pasteris, and Vandy B Spikes. (2014a). SE Greenland snow accumulation rates from GPR and 3 firn cores. Arctic Data Center. <https://doi.org/10.18739/A2ST7DX47>.

1390 Miège, C., Forster, R. R., Box, J. E., Burgess, E. W., McConnell, J. R., Pasteris, D. R., and Spikes, V. B. (2013). Southeast Greenland high accumulation rates derived from firn cores and ground-penetrating radar. Annals of Glaciology, 54(63), 322–332. <https://doi.org/10.3189/2013AoG63A358>. Data: Clement Miege, Richard R Forster, Jason E Box, Evan W Burgess, Joe R McConnell, Daniel R Pasteris, and Vandy B Spikes. (2014b). Snow accumulation rates in SE Greenland from firn cores. Arctic Data Center. <https://doi.org/10.18739/A2P26Q419>.

1395 Miège, C., R. R. Forster, J. E. Box, E. W. Burgess, J. R. McConnell, D. R. Pasteris, and V. B. Spikes (2013), 2010 Arctic Circle Traverse - Southeast Greenland high accumulation rates derived from firn cores and ground-penetrating radar, Annals of Glaciology, 54(63), 322–332, <https://doi.org/10.3189/2013AoG63A358>.

Mock, S. J. (1965) Glaciological studies in the vicinity of Camp Century, Green land, U. S. Army Cold Regions Research and Engineering Laboratory (USA CRREL) Research Report 157. Rinker, J. N. and Mock, S. J. (in preparation) Radar ice sounding data, Green land 1964, USA CRREL Special Report.

1400 Mock, S. J. and Ragle, R. H. (1963) Elevations on the ice sheet of southern Greenland USA CRREL Technical Report 124, 9p. Ragle, R. H. and Davis, T. C. (1962) South Greenland traverses, Journal of Glaciology, vol. 4, p. 129-131.

Montgomery L, Koenig L, Lenaerts JTM, Kuipers Munneke P (2020). Accumulation rates (2009–2017) in Southeast Greenland derived from airborne snow radar and comparison with regional climate models. Annals of Glaciology 61(81), 225–233. <https://doi.org/10.1017/aog.2020.202>

2020.8, Data: Montgomery L, Koenig L, Lenaerts JTM, Kuipers Munneke P (2020). Southeast Greenland Accumulation Rates Derived from Operation IceBridge Snow Radar, 2009-2017. Arctic Data Center. <https://doi.org/10.18739/A2J96095Z>.

1405 Montgomery, L., Miège, C., Miller, J., Scambos, T. A., Wallin, B., Miller, O., et al. (2020). Hydrologic properties of a highly permeable firn aquifer in the Wilkins Ice Shelf, Antarctica. *Geophysical Research Letters*. <https://doi.org/10.1029/2020GL089552>

Moore, M., Narita, N., Maeno, M.: A continuous 770-year record of volcanic activity from East Antarctica, *Journal of Geophysical ...*, <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/91JD01283>, 1991.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Morgan, V., Wookey, C., Li, J., Van Ommen, T., Skinner, W., and Fitzpatrick, M. (1997). Site information and initial results from deep ice drilling on Law Dome, Antarctica. *Journal of Glaciology*, 43(143), 3-10. <https://doi.org/10.3189/S0022143000002768>

Morris, E.M. and D J Wingham. (2014) Densification of polar snow: measurements, modelling and implications for altimetry. *JGR Earth Surfaces*, <https://doi.org/10.1002/2013JF002898>

1415 Morris, E.M., Mulvaney, R., Arthern, R.J., Davies, D., Gurney, R.J., Lambert, P., De Rydt, J., Smith, A.M., Tuckwell, R.J., Winstrup, M., 2017. Snow Densification and Recent Accumulation Along the iSTAR Traverse, Pine Island Glacier, Antarctica. *Journal of Geophysical Research: Earth Surface* 122, 2284–2301. <https://doi.org/10.1002/2017JF004357>

Mosley-Thompson et al., 2001. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Mosley-Thompson, E., J.R. McConnell, R.C. Bales, Z. Li, P-N. Lin, K. Steffen, L.G. Thompson, R. Edwards, and D. Bathke, 2001, Local to Regional-Scale Variability of Greenland Accumulation from PARCA cores. *Journal of Geophysical Research (Atmospheres)*, 106 (D24), 33,839-33,851. <https://doi.org/10.1029/2001JD900067>

1425 Mosley-Thompson, E., McConnell, J. R., Bales, R. C., Li, Z., Lin, P.-N., Steffen, K., Thompson, L. G., Edwards, R., and Bathke, D. (2001), Local to regional-scale variability of annual net accumulation on the Greenland ice sheet from PARCA cores, *J. Geophys. Res.*, 106(D24), 33839–33851, <https://doi.org/10.1029/2001JD900067>.

Mosley-Thompson, E., Paskievitch, J. F., Gow, A. J., and Thompson, L. G. (1999). Late 20th century increase in South Pole snow accumulation. *Journal of Geophysical Research*, 104(D4), 3877–3886. <https://doi.org/10.1029/1998jd200092> and Giovinetto, M. B., and w. Schwerdtfeger, Analysis of a 200 year snow accumulation series from the South Pole, *Arch. Meteorol. Geophys. Bioklimatol., Ser. A*, 15, 1430 227-250, 1966. and Picciotto, E., G. Crozaz, and W. De Breuck, Rate of accumulation of snow at South Pole as determined by radioactive measurements, *Nature*, -203, 393-394, 1964. . As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1435 Mosley-Thompson, E., Paskievitch, J. F., Gow, A. J., and Thompson, L. G. (1999). Late 20th century increase in South Pole snow accumulation. *Journal of Geophysical Research*, 104(D4), 3877–3886. <https://doi.org/10.1029/1998jd200092>. .. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

1440 Mosley-Thompson, E., Paskievitch, J. F., Gow, A. J., and Thompson, L. G. (1999). Late 20th century increase in South Pole snow accumulation. *Journal of Geophysical Research*, 104(D4), 3877–3886. <https://doi.org/10.1029/1998jd200092>. As in: Wang, Y., Ding, M.,

Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Mosley-Thompson, E., Thompson, L. G., Paskievitch, J. F., Pourchet, M., Gow, A. J., Davis, M. E., and Kleinman, J. (1995). Recent increase in South Pole snow accumulation. *Annals of Glaciology*, 21, 131–138. <https://doi.org/10.3189/S0260305500015718> and Lazzara,

1445 M. A., Keller, L. M., Markle, T., and Gallagher, J. (2012). Fifty-year Amundsen–Scott South Pole station surface climatology. *Atmospheric Research*, 118, 240–259. <https://doi.org/10.1016/j.atmosres.2012.06.027>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Mosley-Thompson, E., Thompson, L. G., Paskievitch, J. F., Pourchet, M., Gow, A. J., Davis, M. E., and Kleinman, J. (1995). Recent 1450 increase in South Pole snow accumulation. *Annals of Glaciology*, 21, 131–138. <https://doi.org/10.3189/S0260305500015718>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Motoyama, H., Furukawa, T., Fujita, S., Shinburi, K., Tanaka, Y., Li, Y., Chung, J., Nakazawa, F., Fukui, K., Enomoto, H., Sugiyama, S., 1455 Asano, H., Takeda, Y., Hirabayashi, M., Nishimura, D., Masunaga, T., Kuramoto, T., Kobashi, T., Kusaka, R., and Kameda, T.: Glaciological Data Collected by the 48th–54th Japanese Antarctic Research Expeditions during 2007–2013, *JARE Data Reports*, 35, 1–44, <https://doi.org/10.15094/00010905>, 2015. and Wang, Y., Hou, S., Sun, W., Lenaerts, J. T. M., van den Broeke, M. R., and van Wessem, J. M.: Recent surface mass balance from Syowa Station to Dome F, East Antarctica: comparison of field observations, atmospheric reanalyses, and a regional atmospheric climate model, *Clim. Dynam.*, 45, 2885–2899, <https://doi.org/10.1007/s00382-015-2512-6>, 2015. and Wang, Y., Ding, 1460 M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1465 Mulvaney R and Smith, A M (2017) Borehole derived Pine Island Glacier mean annual temperatures - Collected 2014/2015. Cambridge UK: NERC Polar Data Centre. <https://doi.org/10.5285/ea547d0-9668-4bal-9fc4-67929382395f>

Mulvaney R, Wolff EW. Spatial variability of the major chemistry of the Antarctic ice sheet. *Annals of Glaciology*. 1994;20:440–447. <https://doi.org/10.3189/1994AoG20-1-440-447> and Boutron, C., Lorius, C.. 1977. Trace element content in East Antarctica snow samples. International Association of Hydrological sciences Publication 118 (Symposium at Grenoble, 1975–Isotopes and impurities in snow and ice), 1470 164–171. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Mulvaney, R., Oerter, H., Peel, D.A., Graf, W., Arrowsmith, C., Pasteur, E.C., Knight, B., Littot, G.C., Miners, W.D., 2002. 1000 year ice-core records from Berkner Island, Antarctica. *Annals of Glaciology* 35, 45–51. <https://doi.org/10.3189/172756402781817176>

1475 Mulvaney, R., and E. W. Wolff (1993), Evidence for winter/spring denitrification of the stratosphere in the nitrate record of Antarctic firn cores, *J. Geophys. Res.*, 98(D3), 5213–5220, <https://doi.org/10.1029/92JD02966>. and Mulvaney, R., Peel, D. A., and Reid, A. P. (1990). 26-Year High Resolution Profile Of Major Anions In Snow From Coats Land, Antarctica. *Annals of Glaciology*, 14, 349–349. <https://doi.org/10.3189/S0260305500009198>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset:

a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074,

1480 <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Mulvaney, R., and E. W. Wolff (1993), Evidence for winter/spring denitrification of the stratosphere in the nitrate record of Antarctic firn cores, *J. Geophys. Res.*, 98(D3), 5213–5220, <https://doi.org/10.1029/92JD02966>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1485 Mumford, J. W., Peel, D. A.. 1982, Microparticles, marine salts and stable isotope, in a shallow firn core from the Antarctic Peninsula. Br, Antarct, surv, Bull., 56, 37–47.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1490 Neethling, D. c., Snow accumulation on the Fimbul Ice Shelf, western Dronning Maud Land, Antarctica, in Int. Symposium on Antarctic Glaciological Exploration (ISAGE), 1968, IASH Publ., edited by A. J. Gow, c. Keeler, C.c. Langway, and W. F. Weeks, pp. 390-404, Int. Assn. of Scientific Hydrology, Gentbrugge, Belgium, Scientific Committee on Antarct. Res., Cambridge, Eng., 1970.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1495 Nijampurkar, N., Rao, R.: Polar fallout of radionuclides ^{32}Si , ^{7}Be and ^{210}Pb and past accumulation rate of ice at Indian station, Dakshin Gangotri, East Antarctica, Journal of environmental radioactivity, <https://www.sciencedirect.com/science/article/pii/0265931X9390048C>, 1993.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1500 Nishimura, M., Aoki, T., Niwano, M., Matoba, S., Tanikawa, T., Yamasaki, T., Yamaguchi, S., and Fujita, K.: Quality-controlled meteorological datasets from SIGMA automatic weather stations in northwest Greenland, 2012–2020, *Earth Syst. Sci. Data*, 15, 5207–5226, <https://doi.org/10.5194/essd-15-5207-2023>, 2023. Data: Nishimura, M., T. Aoki, M. Niwano, S. Matoba, T. Tanikawa, S. Yamaguchi, T. Yamasaki, A. Tsushima, K. Fujita, Y. Iizuka, Y. Kurosaki, 2023, Quality-controlled datasets of Automatic Weather Station (AWS) at SIGMA-A site from 2012 to 2020: Level 1.3, 2.00, Arctic Data archive System (ADS), Japan, <http://doi.org/10.17592/001.2022041303>

1505 Nishio, F., Furukawa, T., Hashida, G., Igarashi, M., Kameda, T., Kohno, M., Motoyama, H., Naoki, K., Satow, K., Suzuki, K., Morimasa, T., Toyama, Y., Yamada, T., and Watanabe, O.: Annual-layer determinations and 167 year records of past climate of H72 ice core in east Dronning Maud Land, Antarctica, *Ann. Glaciol.*, 35, 471–479, 2002.. . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletlonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

1510 Niwano et al. (2020), Polar Data Journal, <http://doi.org/10.20575/00000019>

Niwano, M., S. Yamaguchi, T. Yamasaki, T. Aoki, 2020, Near-surface snow physics data from SIGMA-Traverse 2018, 1.10, Arctic Data archive System (ADS), Japan, <http://doi.org/10.17592/001.2020091101>

Nobles, L. H., Glaciological investigations, Nunatarssuaq ice ramp, Northwestern Greenland, Tech. Rep. 66, U.S. Army Snow, Ice and Permafrost Research Establishment, Corps of Engineers, 1960.

- 1515 Oerter H., 2008. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1520 Oerter et al., 2004. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Oerter, H. (2002): Density of firn core DML28C01_00. Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research, Bremerhaven, PANGAEA, <https://doi.org/10.1594/PANGAEA.69513>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML76S05_11. PANGAEA, <https://doi.org/10.1594/PANGAEA.708097>
- 1525 Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML77S05_12. PANGAEA, <https://doi.org/10.1594/PANGAEA.708098>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML78S05_13. PANGAEA, <https://doi.org/10.1594/PANGAEA.708099>
- 1530 Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML79S05_14. PANGAEA, <https://doi.org/10.1594/PANGAEA.708100>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML80S05_15. PANGAEA, <https://doi.org/10.1594/PANGAEA.708101>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML81S05_16. PANGAEA, <https://doi.org/10.1594/PANGAEA.708102>
- 1535 Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML82S05_17. PANGAEA, <https://doi.org/10.1594/PANGAEA.708103>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML83S05_18. PANGAEA, <https://doi.org/10.1594/PANGAEA.708104>
- 1540 Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML84S05_19. PANGAEA, <https://doi.org/10.1594/PANGAEA.708105>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML85S05_20. PANGAEA, <https://doi.org/10.1594/PANGAEA.708106>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML86S05_21. PANGAEA, <https://doi.org/10.1594/PANGAEA.708107>
- 1545 Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML87S05_22. PANGAEA, <https://doi.org/10.1594/PANGAEA.708108>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML88S05_23. PANGAEA, <https://doi.org/10.1594/PANGAEA.708109>
- 1550 Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML89S05_24. PANGAEA, <https://doi.org/10.1594/PANGAEA.708110>
- Oerter, H. (2008): Density and d18O in 10 cm resolution of snow pit DML90S05_25. PANGAEA, <https://doi.org/10.1594/PANGAEA.708111>

- Oerter, H. (2008): High resolution density and d18O of snow pit DML87S05_22. PANGAEA, <https://doi.org/10.1594/PANGAEA.708093>
- Oerter, H., C. E. Bøggild, F. Jung-Rothenhäusler, and N. Reeh, Glaciological fieldwork in Kronsprins Christian Land: Results from 1994, 1555 in Mass balance and related topics of the Greenland ice sheet Report of the 5th workshop, Open Files Series, vol. 95, edited by F. Obleitner and O. B. Olesen, Geological Survey of Greenland, 1995a.
- Oerter, H., Graf, W., Wilhelms, F., Minikin, A., and Miller, H.: Accumulation studies on Amundsenisen, Dronning Maud Land, by means of tritium, DEP and stable isotope measurements: first results from the 1995/96 and 1996/97 field seasons, Ann. Glaciol., 29, 1–9, 1999... .
As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletonga, P., Medley, B., Lenaerts, J., Bertler, 1560 N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Oerter, H., Graf, W., Wilhelms, F., Minikin, A., and Miller, H.: Accumulation studies on Amundsenisen, Dronning Maud Land, by means of tritium, DEP and stable isotope measurements: first results from the 1995/96 and 1996/97 field seasons, Ann. Glaciol., 29, 1–9, 1999..
As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation 1565 of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Oerter, H., Wilhelms, F., Jung-Rothenhäusler, F., Göktas, F., Miller, H., Graf, W., Sommer, S., 2000. Accumulation rates in Dronning Maud Land, Antarctica, as revealed by dielectric- profiling measurements of shallow firn cores. Annals of Glaciology 30, 27–34, <https://doi.org/10.3189/172756400781820705>
- Oerter, H., Wilhelms, F., Jung-Rothenhäusler, F., Göktas, F., Miller, H., Graf, W., and Sommer, S. (2000). Accumulation rates in Dronning Maud Land, Antarctica, as revealed by dielectric-profiling measurements of shallow firn cores. Annals of Glaciology, 30, 27-34. <https://doi.org/10.3189/172756400781820705>
- Oerter, H., Wilhelms, F., Jung-Rothenhäusler, F., Göktas, F., Miller, H., Graf, W., and Sommer, S.: Accumulation rates in Dronning Maud Land, Antarctica, as revealed by dielectric-profiling measurements of shallow firn cores, Ann. Glaciol., 30, 27–34, 2000... . As in: Thomas, 1570 E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Oerter, H., Wilhelms, F., Jung-Rothenhäusler, F., Göktas, F., Miller, H., Graf, W., and Sommer, S.: Accumulation rates in Dronning Maud Land, Antarctica, as revealed by dielectric-profiling measurements of shallow firn cores, Ann. Glaciol., 30, 27–34, 2000.. As in: Wang, Y., 1580 Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Oerter, H.; Graf, W.; Meyer, Hanno; Wilhelms, F. (2004): Density and stable oxygen isotopes of firn core DML07C98_31 (B31), Fig 5. PANGAEA, <https://doi.org/10.1594/PANGAEA.264594>
- Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML01C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58434>
- Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML03C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58794>
- Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML04C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58436>

- Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML05C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58795>
- Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML06C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58796>
- 1595 Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML07C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58792>
- Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML08C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58440>
- 1600 Oerter, H.; Graf, W.; Wilhelms, F.; Minikin, A.; Miller, H. (1999): Physical properties of firn core DML09C97_00. PANGAEA, <https://doi.org/10.1594/PANGAEA.58793>
- Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML03C98_09. PANGAEA, <https://doi.org/10.1594/PANGAEA.58410>
- Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML05C98_06. PANGAEA, <https://doi.org/10.1594/PANGAEA.58407>
- 1605 Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML05C98_07. PANGAEA, <https://doi.org/10.1594/PANGAEA.58806>
- Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML16C98_13. PANGAEA, <https://doi.org/10.1594/PANGAEA.58414>
- 1610 Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML19C98_05. PANGAEA, <https://doi.org/10.1594/PANGAEA.58406>
- Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML21C98_10. PANGAEA, <https://doi.org/10.1594/PANGAEA.58807>
- Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML24C98_18. PANGAEA, <https://doi.org/10.1594/PANGAEA.58419>
- 1615 Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core DML60C98_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.58797>
- Oerter, H.; Wilhelms, F.; Jung-Rothenhäusler, F.; Göktas, F.; Miller, H.; Graf, W.; Sommer, S. (2000): Physical properties of firn core NM03C98_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.58799>
- Oerter, Hans (2006): Temperature measurements in firn drill hole B13 on the Filchner-Ronne Schelf Ice. PANGAEA, <https://doi.org/10.1594/PANGAEA.549096>
- 1620 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML76S05_11. PANGAEA, <https://doi.org/10.1594/PANGAEA.708113>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML77S05_12. PANGAEA, <https://doi.org/10.1594/PANGAEA.708114>
- 1625 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML78S05_13. PANGAEA, <https://doi.org/10.1594/PANGAEA.708115>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML79S05_14. PANGAEA, <https://doi.org/10.1594/PANGAEA.708116>

- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML80S05_15. PANGAEA, <https://doi.org/10.1594/PANGAEA.708117>
- 1630 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML81S05_16. PANGAEA, <https://doi.org/10.1594/PANGAEA.708118>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML82S05_17. PANGAEA, <https://doi.org/10.1594/PANGAEA.708119>
- 1635 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML83S05_18. PANGAEA, <https://doi.org/10.1594/PANGAEA.708120>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML84S05_19. PANGAEA, <https://doi.org/10.1594/PANGAEA.708121>
- 1640 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML85S05_20. PANGAEA, <https://doi.org/10.1594/PANGAEA.708122>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML86S05_21. PANGAEA, <https://doi.org/10.1594/PANGAEA.708123>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML87S05_22. PANGAEA, <https://doi.org/10.1594/PANGAEA.708124>
- 1645 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML88S05_23. PANGAEA, <https://doi.org/10.1594/PANGAEA.708125>
- Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML89S05_24. PANGAEA, <https://doi.org/10.1594/PANGAEA.708126>
- 1650 Oerter, Hans (2008): Annual means of d18O and accumulation rates of snow pit DML90S05_25. PANGAEA, <https://doi.org/10.1594/PANGAEA.708127>
- Ohmura, A. and 10 others. 1992; Energy and Mass balance during the melt season at the equilibrium line altitude, Paakitsoq, Greenland ice sheet. Zürich, Swiss Federal Institute of Technology. (ETH Greenland Expedition. Progress Report 2.)
- Ohmura, A., and Coauthors. 1991: ETH Greenland Expedition I, progress report no. 1, April 1989 to February, 1991. Tech. Report, Department of Geography, ETH Zürich, 108 pp.
- 1655 Ohmura, A., and Coauthors. 1992: ETH Greenland Expedition II, progress Rep. 2, April 1991 to October, 1992. Tech. Report, Department of Geography, ETH Zürich, 94 pp.
- Orheim, O., Gjessing, Y., Lunde, T., Repp, K., Wold, B., Clausen, H. B., and Liestøl, O. (1986). Oxygen isotopes and accumulation rates at Riiser-Larsenisen, Antarctica. In Glaciological research on Riiser-Larsenisen and nearby ice-shelves in Antarctica (Vol. 187, pp. 32–47). Norsk Polarinstitutt. <https://brage.npolar.no/npolar-xmlui/handle/11250/173516>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J.
- 1660 P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Osman, M.B.; Coats, S.; Das, S.B.; McConnell, J.R.; Chellman, N. 2021. North Atlantic jet stream projections in the context of the past 1,250 years. Proceedings of the National Academy of Sciences, 118(38), e2104105118. <https://doi.org/10.1073/pnas.2104105118>. Data: Osman, M.B.; Coats, S.; Das, S.B.; McConnell, J.R.; Chellman, N. (2021-09-17): NOAA/WDS Paleoclimatology - Greenland Ice Cores 1,250
- 1665 Year d18O, Accumulation, and North Atlantic Jet Stream Reconstruction. [indicate subset used]. NOAA National Centers for Environmental Information. <https://doi.org/10.25921/yx6v-ak24>

- Otosaka, I. N. (2020): Firn density profiles in West Central Greenland (ESA CryoVEx 2016). PANGAEA, <https://doi.pangaea.de/10.1594/PANGAEA.921670>, In: Otosaka, IN (2020): Airborne Radar and Firn Density Profiles in West Central Greenland from 2006 to 2017. PANGAEA, <https://doi.org/10.1594/PANGAEA.921673>
- 1670 Otosaka, I. N. (2020): Firn density profiles in West Central Greenland (ESA CryoVEx 2017). PANGAEA, <https://doi.pangaea.de/10.1594/PANGAEA.921672>, In: Otosaka, IN (2020): Airborne Radar and Firn Density Profiles in West Central Greenland from 2006 to 2017. PANGAEA, <https://doi.org/10.1594/PANGAEA.921673>
- P.J. Stephenson and H. Lister, 1959. Preliminary Results of the Glaciological Work on the Trans- Antarctic Expedition 1955-1958, Journal of Glaciology Volume 3, Number 25, p. 426-431
- 1675 Pasteur, P., Mulvaney, M.: Migration of methane sulphonate in Antarctic firn and ice, Journal of Geophysical Research ..., <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2000JD900006>, 2000.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- 1680 Paul C. J. P. Smeets, Peter Kuipers Munneke, Dirk van As, Michiel R. van den Broeke, Wim Boot, Hans Oerlemans, Henk Snellen, Carleen H. Reijmer and Roderik S. W. van de Wal (2018) The K-transect in west Greenland: Automatic weather station data (1993–2016), Arctic, Antarctic, and Alpine Research, 50:1, <https://doi.org/10.1080/15230430.2017.1420954>. Data: Smeets, PCJP et al. (2022): Automatic weather station data collected from 2003 to 2021 at the Greenland ice sheet along the K-transect, West-Greenland [dataset publication series]. PANGAEA, <https://doi.org/10.1594/PANGAEA.947483>
- 1685 Peel, D. A., , R., and Davison, B. M.: Stable-Isotope/Air-Temperature relationship in ice cores from Dolleman Island andthe Palmer Land Plateau, Antarctic Peninsula, Ann. Glaciol., 10,130–136, 1988.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Peel, D.A., 1976. Snow Accumulation, Conductance and Temperature Inland from Halley Bay. Brit. Antarctic Survey Bull., No. 43, p. 1-13.
- 1690 Peel, D.A., Clausen, H.B.: Oxygen-isotope and total beta-radioactivity measurements on 10 m ice cores from the Antarctic Peninsula, Journal of Glaciology, <https://doi.org/10.3189/S0022143000011783>, 1982. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1695 Peel, D.A., and H.B. Clausen, 1982. Oxygen-isotope and total beta-radioactivity measurements on 10 m ice cores from the Antarctic Peninsula. J. of Glaciol., 28(98), 43- 55.
- Pert, G. J., Some glaciers of the Stauning Alper, Northeast Greenland, in Meddelelser om Grønland, Kommissionen for Videnskabelige Undersøgelser i Grønland, 1971.
- 1700 Petit, J. R., J. Jouzel, M. Pourchet, and L. Merlivat, A detailed study of snow accumulation and stable isotope content in Dorne C (Antarctica), J. Geophys. Res., 87, 4301-4308, <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/JC087iC06p04301>, 1982.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- Pettré, P., et al. (1986), Accumulation in Terre Adelie, Antarctica: Effect of meteorological parameters, *J. Glaciol.*, 32, 486–500. and Petit,
1705 J. R., J. Jouzel, M. Pourchet, and L. Merlivat, A detailed study of snow accumulation and stable isotope content in Dorne C (Antarctica),
J. Geophys. Res., 87, 4301-4308, <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/JC087iC06p04301>, 1982.. As in: Wang, Y., Ding,
M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance
field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Pettré, P., et al. (1986), Accumulation in Terre Adelie, Antarctica: Effect of meteorological parameters, *J. Glaciol.*, 32, 486–500.. As
1710 in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation
of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Philippe, M., Tison, J.-L., Fjøsne, K., Hubbard, B., Kjær, H. A., Lenaerts, J. T. M., Drews, R., Sheldon, S. G., De Bondt, K., Claeys,
P., and Pattyn, F.: Ice core evidence for a 20th century increase in surface mass balance in coastal Dronning Maud Land, East Antarctica,
1715 *The Cryosphere*, 10, 2501–2516, <https://doi.org/10.5194/tc-10-2501-2016>, 2016.. . As in: Thomas, E. R., van Wessem, J. M., Roberts, J.,
Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti,
M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513,
<https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Picciotto E, Cameron R, Crozaz G, Deutsch S, Wiloain S. Determination of the Rate of Snow Accumulation at the Pole of Relative
1720 Inaccessibility, Eastern Antarctica: A Comparison of Glaciological and Isotopic Methods. *Journal of Glaciology*. 1968;7(50):273-287. <https://doi.org/10.3189/S002214300003104X>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB
dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13,
3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Picciotto, E., Crozaz, G., and De Breuck, W.: Rate of accumulation of snow at the south pole as determined by radioactive measurements,
1725 *Nature*, 203, 393–394, 1964.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a
comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074,
<https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Picciotto, E., G. Crozaz, and W. De Breuck, 1971. Accumulation on the South Pole- Queen Maud Land Traverse, 1964-1968. *Antarctic
Snow and Ice Studies II*, *Antarc. Res. Ser.*, vol. 16, 257-315, AGU.
- 1730 Pirrit, J., and G.A. Doumani, 1961. Glaciology, Byrd Station and Marie Byrd Land Traverse, 1959- 1960. Report 968-2, IGC Antarctic
Glaciological Data Field Work 1959, The Ohio State Univ. Res. Found.
- Podlech, S., C. Mayer, and C. Bøggild, Glacier retreat, mass-balance and thinning: the Sermilik Glacier, South Greenland, *Geografiska
Annaler*, 86 A(4), 305–317, 2004.
- Polashenski, C. M., Dibb, J. E., Flanner, M. G., Chen, J. Y., Courville, Z. R., Lai, A. M., et al. (2015). Neither dust nor black carbon
1735 causing apparent albedo decline in Greenland's dry snow zone: Implications for MODIS C5 surface reflectance: GREENLAND ALBEDO
DECLINE NOT DUST OR BC. *Geophysical Research Letters*, 42(21), 9319–9327. <https://doi.org/10.1002/2015GL065912>
- Polashenski, C., Z. Courville, C. Benson, A. Wagner, J. Chen, G. Wong, R. Hawley, and D. Hall (2014), Observations of pronounced
Greenland ice sheet firn warming and implications for runoff production, *Geophys. Res. Lett.*, 41, 4238–4246, <https://doi.org/10.1002/2014GL059806>.
- 1740 Portella, M. B. P., Simoes, J. C., Bernardo, R. T., Ilha, J. G., and Casassa, G. (2023). Stable-isotope ratios (d18O and dD) in a firn core
from West Antarctica. *An. Acad. Bras. Cienc.* 95, e20230132. <https://doi.org/10.1590/0001-3765202320230132>

- Porter, S. and Mosley-Thompson, E., 2014. Exploring seasonal accumulation bias in a west central Greenland ice core with observed and reanalyzed data. *Journal of Glaciology*, 60(224), pp. 1065–1074.
- Potter, J. R., Glaciological and oceanographic calculations of the mass balance and oxygen isotope ratio of a melting ice shelf, *J. Glaciol.*, 1745 30, 161–170, 1984.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Potter, J.R., J.G. Paren, and J. Loynes, 1984. Glaciological and Oceanographic Calculations of the Mass Balance and Oxygen Isotope Ratio of a Melting Ice Shelf. *J. of Glaciol.*, 30(105), 161-170.
- 1750 Pourchet, M., J. F. Pinglot, and C. Lorius, Some meteorological applications of radioactive fallout measurements in Antarctic snows, *J. Geophys. Res.*, 88(C10), 6013–6020, 1983.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Pourchet, P., Bartarya, B., Maignan, M., Jouzel, J.: Distribution and fall-out of ^{137}Cs and other radionuclides over Antarctica, *Journal of ...*, <https://www.cambridge.org/core/journals/journal-of-glaciology/article/distribution-and-fallout-of-137cs-and-other-radionuclides-over-antarctica/1CD95A8E8F1BD9A9EFF0E632882B3CC6>, 1997.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Pourchet, P., Magand, M., Frezzotti, F., Ekaykin, E.: Radionuclides deposition over Antarctica, *Journal of environmental ...*, <https://www.sciencedirect.com/science/article/pii/S0265931X03000559>, 2003.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Rasmussen, Sune Olander; Vinther, Bo Møllesøe; Freitag, Johannes; Kipfstuhl, Sepp (2023): EastGRIP snow-pack and ice-core densities (measured and modelled) [dataset bundled publication]. PANGAEA, <https://doi.org/10.1594/PANGAEA.962754>
- 1765 Raynaud, D., Barnola, J. An Antarctic ice core reveals atmospheric CO₂ variations over the past few centuries. *Nature* 315, 309–311 (1985). <https://doi.org/10.1038/315309a0>
- Reed, S. 1966. Performance studyof the Dewlin ice cap stations Greenland, 1963. Cold Regions Research and Engineering Laboratory. Special Report 72.
- Reinwarth, O., W. Rauert, W. Stichler, and H. Moser, Preliminary investigations on accumulation at the Filchner/Ronne Ice Shelves and Atka Bay, *Ann. Glaciol.*, 3, 274–278, 1982.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Reinwarth, Oskar (1981): Fig. 6: Firn temperatures at Filchner Station. PANGAEA, <https://doi.org/10.1594/PANGAEA.761276>
- Ren, J. W., D. H. Qin, J. R. Petit, J. Jouzel, W. T. Wang, C. Liu, XJ Wang, S. L. Qian, and X. X. Wang.: Glaciological studies on Nelson Island, South Shetland Islands, Antarctica. *Journal of Glaciology*, 41(138), 408–412. <https://doi.org/10.3189/S0022143000016270>, 1995.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- Ren, J. and Qin Dahe, I. A.: Variations of snow accumulation and temperature over past decades in the Lambert Glacier basin, Antarctica, Ann. Glaciol., 29, 29–32, 10.3189/172756499781821058, 1999.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Ren, J., C. Li, S. Hou, C. Xiao, D. Qin, Y. Li, and M. Ding (2010), A 2680 year volcanic record from the DT-401 East Antarctic ice core, J. Geophys. Res., 115, D11301, <https://doi.org/10.1029/2009JD012892>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Renaud, A., 1959. Etude physiques et chimiques sur la glace de l'indlandsis du Groenland. Medd. Groenland, 2(177), pp. 100-107.
- Rennermalm, Asa, Regine Hock, Federico Covi, Jing Xiao, Giovanni Corti, et al. 2021. Density and ice layer stratigraphy in 24 shallow firn cores from Southwest Greenland, 2017 - 2019. Arctic Data Center. <https://doi.org/10.18739/A2Q52FD98>
- Reusch, D. B., P. A. Mayewski, S. I. Whitlow, I. I. Pittalwala, and M. S. Twickler (1999), Spatial variability of climate and past atmospheric circulation patterns from central West Antarctic glaciochemistry, J. Geophys. Res., 104(D6), 5985–6001, <https://doi.org/10.1029/1998JD200056>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Roberts, J., Plummer, C., Vance, T., van Ommen, T., Moy, A., Poynter, S., Treverrow, A., Curran, M., and George, S.: A 2000-year annual record of snow accumulation rates for Law Dome, East Antarctica, Clim. Past, 11, 697–707, <https://doi.org/10.5194/cp-11-697-2015>, 2015.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Rotschky, G et al. (2007): A new surface accumulation map for western Dronning Maud Land, Antarctica, from interpolation of point measurements. Journal of Glaciology, 53(182), 385-398, <https://doi.org/10.3189/002214307783258459> and Rotschky, Gerit; Holmlund, Per; Isaksson, Elisabeth; Mulvaney, Robert; Oerter, Hans; van den Broeke, Michiel R; Winther, Jan-Gunnar (2007): Accumulation rates for western Dronning Maud Land from firn cores and snow pits [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.407654>,. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Rott, R., Rack, R., Nagler, N., Skvarca, S.: Climatically induced retreat and collapse of northern Larsen Ice Shelf, Antarctic Peninsula, Annals of Glaciology, <https://www.cambridge.org/core/journals/annals-of-glaciology/article/climatically-induced-retreat-and-collapse-of-northern-larsen-ice-shelf/ADF9E5BB256BCCCF15611B99600D124E>, 1998.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Rundle, A., Glaciological investigations on Sukkertoppen ice cap, southwest Greenland, summer 1964, Tech. Rep. 14, Institute of Polar Studies, Ohio State University Research Foundation, Columbus, Ohio 43212, 1965.
- SEAT10, Burgener et al. (2013) An observed negative trend in West Antarctic accumulation rates for 1975 to 2012: Evidence from new observed and simulated records, Journal of Geophysical Research, Vol 118(10), <https://doi.org/10.1002/jgrd.50362>

SIMBA 2007 data - Lewis, M. J., Tison, J. L., Weissling, B., Delille, B., Ackley, S. F., Brabant, F., Xie, H., 2011. Sea ice and snow cover characteristics during the winter- spring transition in the Bellingshausen Sea: an overview of SIMBA 2007, Deep Sea Research II , <https://doi.org/10.1016/j.dsr2.2010.10.027>.

1820 SIMOES, J. C.; FERRON, F. A. ; ARISTARAIN, A. J. ; BERNARDO, R. T. ; STIEVENARD, M. ; POURCHET, M. . Ice core study from the King George Island, South Shetlands, Antarctica. Pesquisa Antartica Brasileira, Rio de Janeiro, v. 4, p. 9–23, 2004. <http://dx.doi.org/10.31789/pab.v4n1.002>

SPICE cores, T. Sowers, C. Buizert, personal communication

Sarah Das, Luke Trusel, and Matthew Osman. 2018. Ice sheet and ice cap firn core physical and chemical stratigraphy, Disko Bay region, Greenland, 2014-2015. Arctic Data Center. <https://doi.org/10.18739/A2TB0XV7T>.

1825 Satellite-Era Accumulation Traverse 2011 (SEAT11) snowpit density data – Brucker, L. and Koenig, L., SEAT11 Traverse snowpit density data.

Satow, K., 1977. Snow Temperatures at a Depth of 10 meters. Jpn. Antarct. Res. Exped. Data Report, 36 (Glaciol.), 59-60.

Schaller, C. F., Freitag, J., Kipfstuhl, S., Laepple, T., Steen-Larsen, H. C., and Eisen, O.: A representative density profile of the North Greenland snowpack, The Cryosphere, 10, 1991–2002, <https://doi.org/10.5194/tc-10-1991-2016>, 2016.

1830 Schaller, C. Florian; Freitag, J.; Kipfstuhl, S.; Laepple, Thomas; Steen-Larsen, Hans-Christian; Eisen, Olaf (2016): NEEM to EGRIP traverse - density of the surface snow (2 m profiles). <https://doi.org/10.1594/PANGAEA.867873>, In supplement to: Schaller, CF et al. (2016): A representative density profile of the North Greenland snowpack. The Cryosphere, 10(5), 19912002, <https://doi.org/10.5194/tc-10-1991-2016>

Schaller, C. Florian; Kipfstuhl, S.; Steen-Larsen, H.-Christian; Freitag, J.; Eisen, Olaf (2017): Spatial variability of density stratigraphy and melt features for two polar snowpacks in Greenland and East Antarctica. PANGAEA, <https://doi.org/10.1594/PANGAEA.884003>

1835 Schlosser E, Anschütz H, Isaksson E, Martma T, Divine D, Nøst O-A. Surface mass balance and stable oxygen isotope ratios from shallow firn cores on Fimbulisen, East Antarctica. Annals of Glaciology. 2012;53(60):70-78. <https://doi.org/10.3189/2012AoG60A102>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1840 Schlosser E. Effects of seasonal variability of accumulation on yearly mean $\delta^{18}\text{O}$ values in Antarctic snow. Journal of Glaciology. 1999;45(151):463-468. <https://doi.org/10.3189/S0022143000001325> . . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

1845 Schlosser, E., H. Anschütz, D. Divine, T. Martma, A. Sinisalo, S. Altnau, and E. Isaksson (2014), Recent climate tendencies on an East Antarctic ice shelf inferred from a shallow firn core network, J. Geophys. Res. Atmos., 119, 6549–6562, <https://doi.org/10.1002/2013JD020818>.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1850 Schlosser, E.; Oerter, H. (2002): Density and $\delta^{18}\text{O}$ of firn core NM02C89_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.690382> Schlosser, Elisabeth; Oerter, Hans (2002): Annual mean values of $\delta^{18}\text{O}$ and accumulation rate of ice core NM03C98_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.690397>

Schlosser, Elisabeth; Oerter, Hans (2002): Annual mean values of d18O of firn core NM02C89_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.690383>

- 1855 Schwager, M. (2000): Eisbohrkernuntersuchungen zur räumlichen und zeitlichen Variabilität von Temperatur und Niederschlagsrate im Spätholozän in Nordgrönland - Ice core analysis on the spatial and temporal variability of temperature and precipitation during the late Holocene in North Greenland , Berichte zur Polarforschung (Reports on Polar Research), Bremerhaven, Alfred Wegener Institute for Polar and Marine Research, 362 , 136 p. . https://doi.org/10.2312/BzP_0362_2000
- 1860 Schwanck, F., Simoes, J. C., Handley, M., Mayewski, P. A., Bernardo, R. T., and Aquino, F. E. (2016). Drilling, processing and first results for Mount Johns ice core in West Antarctica Ice Sheet. *Braz. J. Geol.* 46, 29-40. <https://doi.org/10.1590/2317-4889201620150035>
- Schwanck, F., Simoes, J. C., Handley, M., and Casassa, G. (2014). Determinacao de elementos-traco em testemunho de firn antartico usando ICP-MS. *Geochimica Brasiliensis* 28, 97-97. <https://doi.org/10.5327/Z0102-9800201400010010>
- Schwanck, F., Simoes, J. C., Handley, M., Mayewski, P. A., Bernardo, R. T., and Aquino, F. E.: Anomalously high Arsenic concentration in a West Antarctic ice core and its relationship to copper mining in Chile, *Atmos. Environ.*, 125, 257D264, <https://doi.org/10.1016/j.atmosenv.2015.11.027>, 2016
- Schwander, J., Stauffer, B. Age difference between polar ice and the air trapped in its bubbles. *Nature* 311, 45–47 (1984). <https://doi.org/10.1038/311045a0>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1870 Schytt, V. (1955) Glaciological investigations in the Thule Ramp area, U. S. Army Snow Ice and Permafrost Research Establishment, Corps of Engineers, Report 28, 88 pp. <https://hdl.handle.net/11681/5989>
- Schyt, V., Glaciological investigations in the Thule Ramp area, Tech. Rep. 28, Snow, Ice, and Permafrost Research Establishment, Corps of Engineers, U.S. Army, 1955.
- Severinghaus, J. P., Albert, M. R., Courville, Z. R., Fahnestock, M. A., Kawamura, K., Montzka, S. A., et al. (2010). Deep air convection in the firn at a zero-accumulation site, central Antarctica. *Earth and Planetary Science Letters*, 293(3–4), 359–367. <https://doi.org/10.1016/j.epsl.2010.03.003>
- Shimizu, H., 1964. Glaciological Studies in West Antarctica. 1960-1962. *Antarctic Snow and Ice Studies, Antarc. Res. Ser. Ser.*, vol. 2, 37-64, AGU.
- 1880 Shimizu, H., R. Naruse, K. Omoto, and A. Yoshimura, 1972. Position of Stations, Surface Elevation and Thickness of the Ice Sheet, and Snow Temperature at 10 m Depth in the Mizuho Plateau- West Enderby Land Area, East Antarctica, 1969-1971. *Jpn. Antarct. Res. Exped. Data Report*, 17 (Glaciol.), 12-37.
- Sigl, M., J.R. McConnell, L. Layman, O.J. Maselli, K.C. McGwire, D.R. Pasteris, D. Dahl-Jensen, J.P. Steffensen, B. Vinther, R. Edwards, R. Mulvaney (2013), A new bipolar ice core record of volcanism from WAIS Divide and NEEM and implications for climate forcing of the last 2000 years, *J. Geophys. Res. Atmos.*, 118, 1151–1169, <https://doi.org/10.1029/2012JD018603>.
- 1885 Sinisalo, A., Moore, J. C., Van De Wal, R. S. W., Bintanja, R., and Jonsson, S. (2003). A 14 year mass-balance record of a blue-ice area in Antarctica. *Annals of Glaciology*, 37, 213–218. <https://doi.org/10.3189/172756403781816013>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1890 Sinisalo, A., et al. (2013), Surface mass balance on Fimbul ice shelf, East Antarctica: Comparison of field measurements and large-scale studies, *J. Geophys. Res. Atmos.*, 118, 11,625–11,635, <https://doi.org/10.1002/jgrd.50875>. As in: Wang, Y., Ding, M., Reijmer, C. H.,

Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

Skvarca, P., De Angelis, H., and Zakrajsek, A. F. (2004). Climatic conditions, mass balance and dynamics of Larsen B ice shelf, Antarctic Peninsula, prior to collapse. *Annals of Glaciology*, 39, 557–562. <https://doi.org/10.3189/1727564047814573>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1895 Sommer, S., D. Wagenbach, R. Mulvaney, and H. Fischer (2000), Glacio-chemical study spanning the past 2 kyr on three ice cores from Dronning Maud Land, Antarctica: 2. Seasonally resolved chemical records, *J. Geophys. Res.*, 105(D24), 29423–29433, <https://doi.org/10.1029/2000JD900450>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

1900 Sorge, E. Glaziologische Untersuchungen in Eismitte, 5. Beitrag. p62-263 in K. Wegener: Wissenschaftliche Ergebnisse der deutschen Großenland-Expedition Alfred Wegener 1929 und 1930/1931 Bd. III Glaziologie.

South Pole Meteorology Office: Amundsen-Scott South Pole Station climatology data, 1957-present (ongoing). AMRDC Data Repository, 1905 accessed DD-MM-YYYY, <https://doi.org/10.48567/szgp-6h49>.

Spencer, M. K., Alley, R. B., and Creyts, T. T.: Preliminary firn-densification model with 38-site dataset, *J. Glaciol.*, 47, 671–676, <https://doi.org/10.3189/172756501781831765>, 2001.

Spikes, V., G. Hamilton, P. Mayewski, S. Arcone, S. Kaspari. 2005. US International Trans- Antarctic Scientific Expedition (US ITASE): GPR Profiles and Accumulation Mapping. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/N5GH9FV6>.

1910 Stauffer B. and H. Oeschger. 1979. Temperaturprofile in bohrloechern am rande des Groenlaendischen Inlandeises. Hydrologie und Glaziologie an der ETH Zurich. Mitteilung Nr. 41.

Steen-Larsen, H. C., et al. (2011), Understanding the climatic signal in the water stable isotope records from the NEEM shallow firn/ice cores in northwest Greenland, *J. Geophys. Res.*, 116, D06108, <https://doi.org/10.1029/2010JD014311>.

1915 Steffen, K., Box, J.E. and Abdalati, W., 1996. Greenland climate network: GC-Net. US Army Cold Regions Reattach and Engineering (CRREL), CRREL Special Report, pp.98-103.

Steffen, K. and J. Box: Surface climatology of the Greenland ice sheet: Greenland Climate Network 1995-1999, *J. Geophys. Res.*, 106, 33,951-33,972, 2001

1920 Steffen, K., Vandecrux, B., Houtz, D., Abdalati, W., Bayou, N., Box, J., Colgan, L., Espona Pernas, L., Griessinger, N., Haas-Artho, D., Heilig, A., Hubert, A., Iosifescu Enescu, I., Johnson-Amin, N., Karlsson, N. B., Kurup, R., McGrath, D., Cullen, N. J., Naderpour, R., Pederson, A. Ø., Perren, B., Philipps, T., Plattner, G.K., Proksch, M., Revheim, M. K., Særelse, M., Schneebli, M., Sampson, K., Starkweather, S., Steffen, S., Stroeve, J., Watler, B., Winton, Ø. A., Zwally, J., Ahlstrøm, A.: GC-Net Level 1 automated weather station data, <https://doi.org/10.22008/FK2/VVXGUT>, GEUS Dataverse, V2, 2023. and Vandecrux, B., Box, J. E., Ahlstrøm, A. P., Andersen, S. B., Bayou, N., Colgan, W. T., Cullen, N. J., Fausto, R. S., Haas-Artho, D., Heilig, A., Houtz, D. A., How, P., Iosifescu Enescu, I., Karlsson, N. B., Kurup Buchholz, R., Mankoff, K. D., McGrath, D., Molotch, N. P., Perren, B., Revheim, M. K., Rutishauser, A., Sampson, K., Schneebeli, M., Starkweather, S., Steffen, S., Weber, J., Wright, P. J., Zwally, H. J.,

1925 Steffen, K.: The historical Greenland Climate Network (GC-Net) curated and augmented level-1 dataset, *Earth Syst. Sci. Data*, 15, 5467–5489, <https://doi.org/10.5194/essd-15-5467-2023>, 2023.

- Steffen, K., Box, J.E. and Abdalati, W., 1996. Greenland climate network: GC-Net. US Army Cold Regions Reattach and Engineering (CRREL), CRREL Special Report, pp.98-103.
- 1930 Steffen, K. and J. Box: Surface climatology of the Greenland ice sheet: Greenland Climate Network 1995-1999, *J. Geophys. Res.*, 106, 33,951-33,972, 2001
- Steffen, K., Vandecrux, B., Houtz, D., Abdalati, W., Bayou, N., Box, J., Colgan, L., Espona Pernas, L., Griessinger, N., Haas-Artho, D., Heilig, A., Hubert, A., Iosifescu Enescu, I., Johnson-Amin, N., Karlsson, N. B., Kurup, R., McGrath, D., Cullen, N. J., Naderpour, R., Pederson, A. Ø., Perren, B., Philipps, T., Plattner, G.K., Proksch, M., Revheim, M. K., Særrelse, M., Schneebeli, M., Sampson, K., Starkweather, S., Steffen, S., Stroeve, J., Watler, B., Winton, Ø. A., Zwally, J., Ahlstrøm, A.: GC-Net Level 1 automated weather station data, <https://doi.org/10.22008/FK2/VVXGUT>, GEUS Dataverse, V2, 2023. and Vandecrux, B., Box, J.E., Ahlstrøm, A.P., Andersen, S.B., Bayou, N., Colgan, W.T., Cullen, N.J., Fausto, R.S., Haas-Artho, D., Heilig, A., Houtz, D.A., How, P., Iosifescu Enescu , I., Karlsson, N.B., Kurup Buchholz, R., Mankoff, K.D., McGrath, D., Molotch, N.P., Perren, B., Revheim, M.K., Rutishauser, A., Sampson, K., Schneebeli, M., Starkweather, S., Steffen, S., Weber, J., Wright, P.J., Zwally, J., Steffen, K.: The historical Greenland Climate Network (GC-Net) curated and augmented Level 1 dataset, Submitted to ESSD, 2023
- 1935 1940 Stenni, B., M. Proposito, R. Gragnani, O. Flora, J. Jouzel, S. Falourd, and M. Frezzotti, Eight centuries of volcanic signal and climate change at Talos Dome (East Antarctica), *J. Geophys. Res.*, 107(D9), <https://doi.org/10.1029/2000JD000317>, 2002.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1945 Stenni, B., F. Serra, M. Frezzotti, V. Maggi, R. Traversi, S. Becagli, and R. Udisti, Snow accumulation rates in Northern Victoria Land (Antarctica) by firn core analysis, *J. Glaciol.*, 46(155), 541–552, 2000.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- 1950 1955 Stenni, B., F. Serra, M. Frezzotti, V. Maggi, R. Traversi, S. Becagli, and R. Udisti, Snow accumulation rates in Northern Victoria Land (Antarctica) by firn core analysis, *J. Glaciol.*, 46(155), 541–552, 2000.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Stenni, B., R. Caprioli, L. Cimino, C. Cremisini, O. Flora, R. Gragnani, A. Longinelli, V. Maggi, and S. Torcini, 200 years of isotope and chemical records in a firn core from Hercules Névé, northern Victoria Land, Antarctica, *Ann. Glaciol.*, 29, 106–112, 1999.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1960 Stenni, B., Serra, F., Frezzotti, M., Maggi, V., Traversi, R., Becagli, S., and Udisti, R. (2000). Snow accumulation rates in northern Victoria Land, Antarctica, by firn-core analysis. *Journal of Glaciology*, 46(155), 541-552. <https://doi.org/10.3189/172756500781832774>
- Stevens, C., Lilien, D., Conway, H., Fudge, T., Koutnik, M., and Waddington, E. (2023). A new model of dry firn-densification constrained by continuous strain measurements near South Pole. *Journal of Glaciology*, 1-15. <https://doi.org/10.1017/jog.2023.87>. Data: Stevens, C., Conway, H., Fudge, T. J., Koutnik, M., Lilien, D., and Waddington, E. D. (2023) Firn density and compaction rates 50km upstream of South Pole U.S. Antarctic Program (USAP) Data Center. <https://doi.org/https://doi.org/10.15784/601680>.

- 1965 Stuart, A. W., and A. J. Heine 1961. ICG Antarctic Glaciological Data: Field Work 1959-60: Glaciology, Victoria Land Traverse 1959-60. The Ohio State University Research Foundation Report 968-1. <http://hdl.handle.net/1811/56633>
- Stuart, A. W., and A. J. Heine, Glaciological work of the 1959–1960 U.S. Victoria Land Traverse, *J. Glaciol.*, 3, 997–1002, 1961.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1970 Stuart, A.W., and Arnold J. Heine, 1961. Glaciology, Victoria Land Traverse, 1959-60. Report 968- 1, IGC Antarctic Glaciological Data Field Work 1959-1960, Ohio State University Research Foundation
- Sugiyama, S., Enomoto, H., Fujita, S., Fukui, K., Nakazawa, F., Holmlund, P., Surdyk, S., 2012. Snow density along the route traversed by the Japanese-Swedish Antarctic Expedition 2007/08. *Journal of Glaciology* 58, 529–539. <https://doi.org/10.3189/2012JoG11J201>
- 1975 TALDICE project: <http://www.taldice.org/project/site/index.php>
- Takahashi, H., Yokoyama, T., Igarashi, M., Motoyama, H. and Suzuki, K. 2009. Resolution of environmental variation by detailed analysis of YM shallow ice core in Antarctica. *Bulletin of Glaciological Research*, 27, pp.15-23.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 1980 Takahashi, S., Ageta, Y., Fujii, Y., and Watanabe, O.: Surface mass balance in east Dronning Maud Land, Antarctica, observed by Japanese Antarctic Research Expeditions, *Ann. Glaciol.*, 20, 242–248, <https://doi.org/10.3189/1994AoG20-1-242-248>, 1994.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- TalDIce ice core
- 1985 Taveres, F.A., Simoes, J.C., Bernardo, R.T., Gerhard, N.P., Casassa, G. and Marquetto, L. (2020). Razões de isótopos estáveis em um teste-munho de firn do manto de gelo da Antártica Oriental. *Pesquisas em Geociências* 47, e094026-e094026. <https://doi.org/10.22456/1807-9806.108585>
- Taylor, L.D., 1971. Glaciological Studies on the South Pole Traverse, 1962-1963. *Antarctic Snow and Ice Studies II*, *Antarc. Res. Ser.*, vol. 16, 209-224, AGU.
- 1990 Tedesco, M. and Marshall, H.P. 2019. Greenland Ice Sheet Summit Camp Snow Density, Grain Size, and Hardness Profiles, June 26-27, 2010. Arctic Data Center. <https://doi.org/10.18739/A2M03XX3M>.
- Thomas, E. R., G. J. Marshall, and J. R. McConnell (2008), A doubling in accumulation in the western Antarctic Peninsula since 1850, *Geophys. Res. Lett.*, 35, L01706, <https://doi.org/10.1029/2007GL032529>.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., 1995 Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Thomas, E.R., Bracegirdle, T.J. Precipitation pathways for five new ice core sites in Ellsworth Land, West Antarctica. *Clim Dyn* 44, 2067–2078 (2015). <https://doi.org/10.1007/s00382-014-2213-6>. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., 2000 Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.

- Thomas, R. H., D. R. MacAyeal, D. H. Eilers, and D. R. Gaylord, Glaciological studies on the Ross Ice Shelf, Antarctica, 1973-1978, in The Ross Ice Shelf: Glaciology and Geophysics, Antarct. Res. Ser., vol. 42, edited by c. R. Bentley and D. E. Hayes, pp. 21-53, AGU, Washington, D.C., 1984.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Thomas, R.H., D.R. MacAyeal, D.H. Eilers, and D.R. Gaylord, 1984. Glaciological Studies on the Ross Ice Shelf, Antarctica, 1972-1978. The Ross Ice Shelf: Glaciology and Geophysics Antarctic Research Series, vol. 42, Paper 2, 21-53, AGU.
- Thompson, L. G., Peel, D. A., Mosley-Thompson, E., Mulvaney, R., Dai, J., Lin, P. N., Davis, M. E., and Raymond, C. F.: Climate change since AD 1510 on Dyer Plateau, Antarctic Peninsula: Evidence for recent climate change, Ann. Glaciol., 20, 420–426, 1994.. . As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekyakin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Thomsen H.H. O.B. Olesen R.J. Braithwaite and C.E. Bøggild. 1991. Ice drilling and mass balance at Pakitsoq Jakobshavn central West Greenland. Rapport Grønlands Geologiske Undersøgelse 152 80?84. 10.34194/rapggu.v152.8160
- Thomsen, H. ., Olesen, O. ., Braithwaite, R. . and Bøggild, C. .: Ice drilling and mass balance at Pâkitsoq, Jakobshavn, central West Greenland, Rapp. Grønlands Geol. Undersøgelse, 152, 80–84, <https://doi.org/10.34194/rapggu.v152.8160>, 1991.
- Thomsen, H. H., Mass balance measurements at the margin of the inland ice near Jakobshavn, West Greenland, Polarforschung, 54(1), 37–41, 1984.
- Trusel, L. D., Das, S. B., Osman, M. B., Evans, M. J., Smith, B. E., Fettweis, X., et al. (2018). Nonlinear rise in Greenland runoff in response to post-industrial Arctic warming. Nature, 564(7734), 104–108. <https://doi.org/10.1038/s41586-018-0752-4>
- U.S. Army Transportation Board (1960) Report of environmental operation: Lead Dog 1960, Final Report, Project Lead Dog, TCB- 60 - 023 - E0, 188p. <https://apps.dtic.mil/sti/pdfs/AD0263548.pdf>
- US International Trans-Antarctic Scientific Expedition (US ITASE) Glaciochemical Data, Version 2- Mayewski, P. A. and D. A. Dixon. 2013. US International Trans-Antarctic Scientific Expedition (US ITASE) Glaciochemical Data. Version 2. [US_ITASE_Core Info-SWE-Density_2013.xlsx]. Boulder, Colorado USA: National Snow and Ice Data Center.
- US-ITASE, Mayewski, P. A. and D. A. Dixon. 2013. US International Trans-Antarctic Scientific Expedition (US ITASE) Glaciochemical Data. Version 2. [US_ITASE_Core Info-SWE- Density_2013.xlsx]. Boulder, Colorado USA: National Snow and Ice Data Center.
- Urbini, S., Frezzotti, M., Gandolfi, S., Vincent, C., Scarchilli, C., Vittuari, L., and Fily, M.: Historical behaviour of Dome C and Talos Dome (East Antarctica) revealed by snow accumulation and ice velocity measurements, Global Planet. Changes, 60, 576– 588, <https://doi.org/10.1016/j.gloplacha.2007.08.002>, 2008.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Vallelonga, P., Christianson, K., Alley, R. B., Anandakrishnan, S., Christian, J. E. M., Dahl-Jensen, D., Gkinis, V., Holme, C., Jacobel, R. W., Karlsson, N. B., Keisling, B. A., Kipfstuhl, S., Kjær, H. A., Kristensen, M. E. L., Muto, A., Peters, L. E., Popp, T., Riverman, K. L., Svensson, A. M., Tibuleac, C., Vinther, B. M., Weng, Y., and Winstrup, M.: Initial results from geophysical surveys and shallow coring of the Northeast Greenland Ice Stream (NEGIS), The Cryosphere, 8, 1275–1287, <https://doi.org/10.5194/tc-8-1275-2014>, 2014.
- Van Den Broeke, M.R., J. Winther, E. Isaksson, J.F. Pinglot, L. Karlof, T. Eiken, L. Conrads, 1999. Climate Variables along a Traverse Line in Dronning Maud Land, East Antarctica. J. of Glaciol., 42(150), 295-302.

- 2040 Vandecrux, B., Colgan, W., Solgaard, A.M., Steffensen, J.P., and Karlsson, N.B.(2021). Firn evolution at Camp Century, Greenland: 1966-2100, *Frontiers in Earth Science*, <https://doi.org/10.3389/feart.2021.578978>, 2021 dataset: <https://doi.org/10.22008/FK2/SR3O4F>
- Vandecrux, B.; Box, J.; Ahlstrøm, A.; Fausto, R.; Karlsson, N.; Rutishauser, A.; Citterio, M.; Larsen, S.; Heuer, J.; Solgaard, A.; Colgan, W.: GEUS snow and firn data in Greenland, <https://doi.org/10.22008/FK2/9QEOWZ>, GEUS DataVERSE, 2023
- Vaughan, D. G., Bamber, J. L., Giovinetto, M., Russell, J., and Cooper, A. P. R.: Reassessment of net surface mass balance in Antarctica, 2045 *J. Climate*, 12, 933–946, [https://doi.org/10.1175/1520-0442\(1999\)012<0933:RONSMB>2.0.CO;2](https://doi.org/10.1175/1520-0442(1999)012<0933:RONSMB>2.0.CO;2), 1999. and Venteris, E. R., and Whillans, I. M. (1998). Variability of accumulation rate in the catchments of Ice Streams B, C, D and E, Antarctica. *Annals of Glaciology*, 27, 227–230. <https://doi.org/10.3189/1998AoG27-1-227-230>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 2050 Verfaillie, D., Fily, M., Le Meur, E., Magand, O., Jourdain, B., Arnaud, L., and Favier, V.: Snow accumulation variability derived from radar and firn core data along a 600 km transect in Adelie Land, East Antarctic plateau, *The Cryosphere*, 6, 1345–1358, <https://doi.org/10.5194/tc-6-1345-2012>, 2012.
- Verfaillie, D., Fily, M., Le Meur, E., Magand, O., Jourdain, B., Arnaud, L., and Favier, V.: Snow accumulation variability derived from radar and firn core data along a 600 km transect in Adelie Land, East Antarctic plateau, *The Cryosphere*, 6, 1345–1358, <https://doi.org/10.5194/tc-6-1345-2012>, 2012.
- Vinther, Bo Møllesøe; Freitag, Johannes; Kipfstuhl, Sepp; Weißbach, Stefanie; Karlsson, Nanna Bjørnholt; Münch, Thomas; Hörhold, Maria (2022): Accumulation rate of the B26_2011 firn core. PANGAEA, <https://doi.org/10.1594/PANGAEA.945666>,
- Vladimirova D.O., Ekaykin A.A. Climatic variability in Davis sea sector (East Antarctica) over the past 250 years based on the 105 km ice core geochemical data // Problemy Arktiki i Antarktiki, Vol.1 (99), 2014, p. 102-113 (in russian)... As in: Thomas, E. R., van Wessem, 2060 J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, *Clim. Past*, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- WAIS cores, T. Sowers, C. Buiertz, personal communication
- Wagenbach, Dietmar; Graf, W.; Minikin, A.; Trefzer, U.; Kipfstuhl, S.; Oerter, H.; Blindow, Norbert (1994): Annual means of density, 2065 d18O, deuterium, tritium, and accumulation rates of firn core BER01C90_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.548637>
- Wagenbach, Dietmar; Graf, W.; Minikin, A.; Trefzer, U.; Kipfstuhl, S.; Oerter, H.; Blindow, Norbert (1994): Density and d18O of snow pit BER01S90_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.548653>
- Wagenbach, Dietmar; Graf, W.; Minikin, A.; Trefzer, U.; Kipfstuhl, S.; Oerter, H.; Blindow, Norbert (1994): Density and d18O of snow pit BER02S90_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.548654>
- 2070 Wagenbach, Dietmar; Graf, W.; Minikin, A.; Trefzer, U.; Kipfstuhl, S.; Oerter, H.; Blindow, Norbert (1994): Density, d18O, deuterium, and tritium of firn core BER02C90_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.548622>
- Wagenbach, Dietmar; Graf, Wolfgang; Minikin, Andreas; Trefzer, Ulrich; Kipfstuhl, Sepp; Oerter, Hans; Blindow, Norbert (1994): Annual means of density, d18O, deuterium, tritium, and accumulation rates of firn core BER01C90_01. PANGAEA, <https://doi.org/10.1594/PANGAEA.548637>
- 2075 Wagenbach, Dietmar; Graf, Wolfgang; Minikin, Andreas; Trefzer, Ulrich; Kipfstuhl, Sepp; Oerter, Hans; Blindow, Norbert (1994): Annual means of density, d18O, deuterium, tritium, and accumulation rates of firn core BER02C90_02. PANGAEA, <https://doi.org/10.1594/PANGAEA.548638>

- Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021. . As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Wang, Y., Ding, M., van Wessem, J. M., Schlosser, E., Altnau, S., van den Broeke, M. R., et al. (2016). A comparison of Antarctic Ice Sheet surface mass balance from atmospheric climate models and in situ observations. *Journal of Climate*, 29(14), 5317–5337. <https://doi.org/10.1175/JCLI-D-15-0642.1>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Wang, Y., Ding, M., van Wessem, J., Schlosser, E., Altnau, S., van den Broeke, M. R., Lenaerts, J. T. M., Thomas, E. R., Isaksen, E., Wang, J., and Sun, W.: A comparison of Antarctic Ice Sheet surface mass balance from atmospheric climate models and in situ observations, *J. Climate.*, 29, 5317–5337, 2016. and Ding, M., Xiao, C., Li, Y., Ren, J., Hou, S., Jin, B., and Sun, B.: Spatial variability of surface mass balance along a traverse route from Zhongshan station to Dome A, Antarctica, *J. Glaciol.*, 57, 658–666, <https://doi.org/10.3189/002214311797409820>, 2011.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Wang, Y., Hou, S., Sun, W., Lenaerts, J. T. M., van den Broeke, M. R., and van Wessem, J. M.: Recent surface mass balance from Syowa Station to Dome F, East Antarctica: comparison of field observations, atmospheric reanalyses, and a regional atmospheric climate model, *Clim. Dynam.*, 45, 2885–2899, <https://doi.org/10.1007/s00382-015-2512-6>, 2015. and Motoyama, H., Furukawa, T., Fujita, S., Shinbori, K., Tanaka, Y., Li, Y., Chung, J.-W., Nakazawa, F., Fukui, K., Enomoto, H., Sugiyama, S., Asano, H., Takeda, Y., Hirabayashi, M., Nishimura, D., Masunaga, T., Kuramoto, T., Kobashi, T., Kusaka, R., Kinase, T., Ikeda, C., Suzuki, T., Ohno, H., Hoshina, Y., Hayakawa, Y., and Kameda, T.: Glaciological Data Collected by the 48th–54th Japanese Antarctic Research Expeditions during 2007–2013, *JARE Data Rep.*, 341, *Glaciology*, 35, 1–44, 2015.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Wang, Y., Sodemann, H., Hou, S. et al. Snow accumulation and its moisture origin over Dome Argus, Antarctica. *Clim Dyn* 40, 731–742 (2013). <https://doi.org/10.1007/s00382-012-1398-9>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Watanabe, O., Y. Fujii, T. Kameda, K. Kawada, H. Motoyama, M. Nakawo, H. Narita, F. Nishio, K. Sato, and H. Shoji 1997. Depth-density data of S25, H15, G15, and G6 ice cores collected by the Japanese Antarctic research expeditions. *JARE Data Rpt.* 26.
- Watanabe, O.: Density and hardness of snow in Mizuho Plateau-West Enderby Land in 1970– 1971, *JARE Data Reports*, 27, 187–235, 1975.
- Weertman J.: Comparison between measured and theoretical temperature profiles of the Camp Century Greenland Borehole Journal of Geophysical Research 73(8) American Geophysical Union (AGU) 2691?2700 4 1968 10.1029/jb073i008p02691
- Weinhart, Alexander Helmut; Freitag, J.; Höhhold, Maria; Kipfahl, S.; Eisen, Olaf (2021): Surface snow density along an overland traverse between Kohnen Station and former Plateau Station (East Antarctica). PANGAEA, <https://doi.org/10.1594/PANGAEA.928079>

- Wen, J., Jezek, K. C., Monaghan, A. J., Sun, B., Ren, J., and Huybrechts, P. (2006). Accumulation variability and mass budgets of the Lambert Glacier-Amery Ice Shelf system, East Antarctica, at high elevations. *Annals of Glaciology*, 43, 351–360. <https://doi.org/10.3189/172756406781812249>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, 2120 <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Wever, N., Keenan, E., Kausch, T., Lehning, M. (2022). SnowMicroPen measurements and manual snowpits from Dronning Maud Land, East Antarctica. EnviDat. <https://doi.org/10.16904/envidat.331>
- White, S., Glaciological studies of two outlet glaciers Northwest Greenland, 1953, in *Meddelelser om Grønland*, vol. 137, Kommissionen for Videnskabelige Undersøgelser i Grønland, 1956.
- Wilhelms, F. (2000): Density of ice core ngt03C93.2 from the North Greenland Traverse. <https://doi.org/10.1594/PANGAEA.56560>
- Wilhelms, F. (2000): Density of ice core ngt06C93.2 from the North Greenland Traverse. <https://doi.org/10.1594/PANGAEA.57153>
- Wilhelms, F. (2000): Density of ice core ngt14C93.2 from the North Greenland Traverse. <https://doi.org/10.1594/PANGAEA.56615>
- Wilhelms, F. (2000): Density of ice core ngt27C94.2 from the North Greenland Traverse. <https://doi.org/10.1594/PANGAEA.57296>
- Wilhelms, F. (2007): Density of firn core DML96C07_39. Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA, <https://doi.org/10.1594/PANGAEA.615238>
- Wilhelms, F.: Measuring the Conductivity and Density of Ice Cores, *Ber. Polarforsch.*, 191 pp., 1996.
- Wilhelms, Frank (2007): Density of firn core DML94C07_38. Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA, <https://doi.org/10.1594/PANGAEA.615180>
- Winski, D. A., Alley, R., et al. (2019). The South Pole Ice Core (SPICEcore) chronology and supporting data. U.S. Antarctic Program 2135 (USAP) Data Center. <https://doi.org/https://doi.org/10.15784/601206>
- Winski, D. A., Fudge, T. J., Ferris, D. G., Osterberg, E. C., Fegyveresi, J. M., Cole-Dai, J., Thundercloud, Z., Cox, T. S., Kreutz, K. J., Ortman, N., Buizert, C., Epifanio, J., Brook, E. J., Beaudette, R., Severinghaus, J., Sowers, T., Steig, E. J., Kahle, E. C., Jones, T. R., Morris, V., Aydin, M., Nicewonger, M. R., Casey, K. A., Alley, R. B., Waddington, E. D., Iverson, N. A., Dunbar, N. W., Bay, R. C., Souney, J. M., Sigl, M., and McConnell, J. R.: The SP19 chronology for the South Pole Ice Core – Part 1: volcanic matching and annual layer counting, Clim. Past, 15, 1793–1808, <https://doi.org/10.5194/cp-15-1793-2019>, 2019.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Winstrup, M., Vallelonga, P., Kjær, H. A., Fudge, T. J., Lee, J. E., Riis, M. H., Edwards, R., Bertler, N. A. N., Blunier, T., Brook, E. J., Buizert, C., Ciobanu, G., Conway, H., Dahl-Jensen, D., Ellis, A., Emanuelsson, B. D., Hindmarsh, R. C. A., Keller, E. D., Kurbatov, A. 2145 V., Mayewski, P. A., Neff, P. D., Pyne, R. L., Simonsen, M. F., Svensson, A., Tuohy, A., Waddington, E. D., and Wheatley, S.: A 2700-year annual timescale and accumulation history for an ice core from Roosevelt Island, West Antarctica, Clim. Past, 15, 751–779, <https://doi.org/10.5194/cp-15-751-2019>, 2019. Data: Winstrup, Mai (2019): Roosevelt Island Climate Evolution (RICE) ice core: The RICE17 chronology and accumulation record for the past 2700 years. PANGAEA, <https://doi.org/10.1594/PANGAEA.899147>
- Winstrup, W., Vallelonga, V., Kjær, K., Fudge, F.: A 2700-year annual timescale and accumulation history for an ice core from Roosevelt 2150 Island, West Antarctica, Climate of the ..., <https://cp.copernicus.org/articles/15/751/2019/>, 2019.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.

- Wolff, W., Suttie, S.: Antarctic snow record of southern hemisphere lead pollution, Geophysical Research Letters, <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/94GL00656>, 1994.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Xiao, C., Allison, I., Ren, J.W., Qin, D. H., Zhang, M. J., and Li, Z. Q.: Meteorological and glaciological evidence for different climatic variations on the east and west side of the Lambert Glacier basin, Antarctica, Ann. Glaciol., 39, 188–194, 2004.. As in: Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Valletlonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A.: Regional Antarctic snow accumulation over the past 1000 years, Clim. Past, 13, 1491–1513, <https://doi.org/10.5194/cp-13-1491-2017>, 2017.
- Yamada, T., and H. Narita, 1975. Snow Temperature at 10 meters below the Surface in Mizuho Plateau. Jpn. Antarct. Res. Exped. Data Report, 27 (Glaciol.), 145.
- Yamaguchi, S., Matoba, S., Yamazaki, T., Tsushima, A., Niwano, M., Tanikawa, T., Aoki, T., 2014. Glaciological observations in 2012 and 2013 at SIGMA-A site, Northwest Greenland. Bull. Glaciol. Res. 32, 95–105. <https://doi.org/10.5331/bgr.32.95>
- Yokoyama, K., Net accumulation by stake measurements, in Glaciological Research Program in Mizuho Plateau-west Ender Land, East Antarctica, Part 3, 973– 97 , JARE Data Rep., pp. 62–68, Nat. Inst. of Polar Res., Tokyo, 1975.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Young, N. W., Pourchet, M., Kotlyakov, V. M., Korolev, P. A., and Dyugarov, M. B. (1982). Accumulation Distribution in the IAGP Area, Antarctica: 90°E-150°E. Annals of Glaciology, 3, 333–338. <https://doi.org/10.3189/S0260305500003025> and Vinogradov, O. N. and Lorius., C. 1972. Evaluation of the results of snow accumulation measurements along the Mirny observatory–Vostok station profile on the basis of Soviet–French investigations in 1964 and 1969. Sov. Antarct. Exped. Inf. Bull., 8(5), 237–243.. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Young, N. W., Pourchet, M., Kotlyakov, V. M., Korolev, P. A., and Dyugarov, M. B. (1982). Accumulation Distribution in the IAGP Area, Antarctica: 90°E-150°E. Annals of Glaciology, 3, 333–338. <https://doi.org/10.3189/S0260305500003025>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- Zanolini F, Delmas RJ, Legrand M. Sulphuric and Nitric Acid Concentrations and Spikes Along A 200 m Deep Ice Core at D 57 (Terre Adélie, Antarctica). Annals of Glaciology. 1985;7:70-75. <https://doi.org/10.3189/S0260305500005930>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- <http://cires.colorado.edu/science/groups/steffen/gcnet/>
- alais, J.M., Whillans, I.M. and Bull, C.. 1982. Snow stratigraphic studies at Dome C, East Antarctica: an investigation of depositional and diagenetic processes. Ann. Glaciol., 3, 239–242. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, Earth Syst. Sci. Data, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- de Quervain, A., and P.-L. Mercanton, Résultats scientifiques de l’expédition suisse au Groenland 1912-13, Meddelelser om Grønland, 59(5), 55–272, 1925.

- de Quervain, M, 1969. Schneekundliche Arbeiten der Internationalen Glaziologischen Grönlandexpedition (Nivologie). Medd. Grønl. 177(4)
- de Quervain, M. (1969), Schneekundliche Arbeiten der Internat. Glaziolog. Gronlandexpedition. Meddelelser om Gronland, Bd. 177, Nr. 4.
- 2195 personal communication from T. Sowers 1994
personal communication from T. Sowers 1996
- van Ommen, T., Morgan, V. Snowfall increase in coastal East Antarctica linked with southwest Western Australian drought. *Nature Geosci* 3, 267–272 (2010). <https://doi.org/10.1038/ngeo761>. As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 2200 van den Broeke, M. R., Winther, J.-G., Isaksson, E., Pinglot, J. F., Karlöf, L., Eiken, T., and Conrads, L. (1999). Climate variables along a traverse line in Dronning Maud Land, East Antarctica. *Journal of Glaciology*, 45(150), 295–302. <https://doi.org/10.3189/002214399793377266>.
As in: Wang, Y., Ding, M., Reijmer, C. H., Smeets, P. C. J. P., Hou, S., and Xiao, C.: The AntSMB dataset: a comprehensive compilation of surface mass balance field observations over the Antarctic Ice Sheet, *Earth Syst. Sci. Data*, 13, 3057–3074, <https://doi.org/10.5194/essd-13-3057-2021>, 2021.
- 2205 van der Veen, C. J., Mosley-Thompson, E., Jezek, K. C., Whillans, I. M., and Bolzan, J. F.: Accumulation rates in South and Central Greenland, *Polar Geography*, 25, 79–162, <https://doi.org/10.1080/10889370109377709>, 2001.
van der Veen, C.J.,E. Mosley-Thompson, K. C. Jezek , I. M. Whillans and J. F.Bolzan (2001) Accumulation rates in South and Central Greenland, *Polar Geography*, 25:2, 79-162,<https://doi.org/10.1080/10889370109377709>
- 2210 von Drygalski, E., Grönland-Expedition der Gesellschaft für Erdkunde zu Berlin 1891-1893, vol. 1, Kühl, Berlin, 1897.