SUMup Annual Accumulation Dataset readme

1.0 Introduction

This yearly accumulation dataset, going back to 1800 where applicable, was compiled by the Surface mass balance and snow on sea ice working group (SUMup). This dataset is a community effort to distribute easy to use in-situ data to improve surface mass balance modeling and remote sensing efforts. This dataset is a compilation of work from many individual researchers. When using this dataset please cite **both** the individual researchers who provided the data as listed in the Citation Column as well as the dataset. For questions about the dataset or to contribute your data to the dataset please contact the dataset compiler Lora Koenig lora.koenig@colorado.edu or Lynn Montgomery *lynn.montgomery@colorado.edu*.

2.0 Contributing to the dataset

If you would like to contribute to the dataset please contact the authors as instructed above with the following data.

For no data enter -9999 otherwise fill in the columns as follows:

Date Taken- Enter the year the data was taken in format YYYYMMDD. If only the year is known enter YYYY0000.

Lat-Latitude of measurements in decimal degrees (N is positive S is negative).

Long- Longitude of measurement in decimal degrees (E is positive W is negative).

Start Year- Enter the start year if the average accumulation measurement is not annual.

End Year- Enter the end year if the average accumulation measurement is not annual

Year- Year of accumulation measurement for annual measurements.

Accum- Accumulation in m of water equivalent.

Error- Uncertainty on accumulation measurement.

Elevation- The surface elevation of the measurement location in m.

Radar Horizontal Resolution- The horizontal resolution in m of radar data along track.

Method- see method key below for numeric value of method used. If a method was used not listed in the key please add the method to the key with the next highest number.

Name- Concise name of ice core or measurement.

Citation- Enter the citation for the data.

3.0 Format

The dataset is in an excel spread sheets. With the following columns, described in more detail in section 2.0. Date Taken, Lat, Long, Start Year, End Year, Year, Accumulation in m of water equivalent, Error on accumulation measurement, Elevation of surface in m, Radar Horizontal Resolution in m, method, name, citation. Measurements are accurate to four significant figures after the decimal place. Please use this as a standard when doing analysis of the data.

No data value is -9999. These data were not provided by the original dataset and we advise you to visit the original citation or contact the original owner for more information.

Name Key

1. SEAT10-1
2. SEAT10-3
3. SEAT10-4
4. SEAT10-5
5. SEAT10-6
6. US ITASE South Pole-1995 Core
7. USITASE Siple Dome 1994 Core
8. USITASE Upstream-C 1995-1996 Core
9. USITASE Central West Antarctic CWA-A
10. USITASE Central West Antarctic CWA-D
11. USITASE Ross Ice Drainage System RIDS-A
12. USITASE Ross Ice Drainage System RIDS-B
13. USITASE Ross Ice Drainage System RIDS-C
14. USITASE ITASE 99-1 (Midpoint)
15. USITASE ITASE 00-1 'A'(wais)
16. USITASE ITASE 00-2 'C'
17. USITASE ITASE 00-3 'D'
18. USITASE ITASE 00-4 'E'
19. USITASE ITASE 00-5 'F'
20. USITASE ITASE 01-1
21. USITASE ITASE 01-2
22. USITASE ITASE 01-3
23. USITASE ITASE 01-4
24. USITASE ITASE 01-5
25. USITASE ITASE 01-6
26. USITASE ITASE 02-1
27. USITASE ITASE 02-4
28. USITASE ITASE 02-6-SPRESO
29. USITASE ITASE 02-7-100K
30. South Pole
31. ACT10-A
32. ACT10-B
33. ACT10-C
34. PIG2010
35. DIV2010
36. THW2010
37. PARCA-1997-cores (CORE 7147)
38. PARCA-1997-cores (CORE 7247)
39. PARCA-1997-cores (CORE 7551)
40. PARCA -1997-cores (CORE 7653-Core1)
41. PARCA-1997-cores (CORE 7653-Core2)
42. PARCA-1997-cores (N. Dye 3 (Saddle)-A)
43. PARCA-1997-cores (N. Dye 3 (Saddle)-B)
44. PARCA-1997-cores (S. TUNU Core A)
45. PARCA-1997-cores (S. TUNU Core B)
46. PARCA-1997-cores (S. TUNU Core C)
47. PARCA-1997-cores (S. Dome Core A)
48. PARCA-1997-cores (S. Dome Core B)
49. PARCA-1997-cores (NASA East Core A)
50. PARCA-1998-cores (CORE 6345)
51. PARCA-1998-cores (CORE 6642 (B))
52. PARCA-1998-cores (CORE 6745)
53. PARCA-1998-cores (CORE 6839)
54. PARCA-1998-cores (CORE 6841)
55. PARCA-1998-cores (CORE 6938)
56. PARCA-1998-cores (CORE 6939)
57. PARCA-1998-cores (CORE 6941)
58. PARCA-1998-cores (CORE 6943)
59. PARCA-1998-cores (CORE 6945)
60. PARCA-1998-cores (CORE 7145)
61. PARCA-1998-cores (CORE 7245)
62. PARCA-1998-cores (CORE 7249)
63. PARCA-1998-cores (CORE 7345)
64. PARCA-1998-cores (CORE 7347)
65. WDC05A
66. WDC05Q
67. ACT2010 Radar profile
68. ITASE00-4 to ITASE00-5 Traverse
69. GISP2
70. Bamboo Forest
71. DML83S05_18
72. DML81S05_16
73. DML79S05_14
74. DML78S05_13
75. DML87S05_22

76. DML88S05_23
77. DML77S05_12
78. DML86S05_21
79. DML90S05_25
80. DML89S05_24
81. DML82S05_17
82. DML80S05_15
83. DML84S05_19
84. DML76S05_11
85. DML85S05_20
86. NM02C89_01
87. FRI18S90_330
88. FRI13C90_335
89. FRI15S90_131
90. FRI17S90_231
91. BER02S90_02
92. FRI13S90_335
93. NM03C98_01
94. BER01S90_01
95. FRI09C90_90
96. FRI12S90_236
97. FRI17C90_231
98. FRI21C90_HWF
99. FRI11S90_235
100. FRI11C90_235
101. FRI15C90_131
102. FRI16S90_230
103. FRI29C95_10
104. FRI25C95_14
105. FRI27C95_12
106. FRI23C95_16
107. FRI28C95_11
108. FRI33C95_06
109. FRI10C90_136
110. FRI32C95_07
111. FRI14C90_336
112. FRI16C90_230
113. FRI19C90_05
114. DML641C02_01
115. FRI18C90_330
116. FRI20C90_06
117. FRI12C90_236
118. FRI38C95_04
119. DML651C02_03
120. FRI35C95_01
121. NM02C02_02
122. BER02C90_02
123. BER01C90_01
124. DML68C04_03
125. DML73C05_03
126. DML67C04_02
127. DML74C05_04
128. DML71C05_01
129. DML72C05_02

4.0 Method Key

1. Ice core or snow pits
2. Radar isochrones
3. Stake Measurements

5.0 Citations

When using this dataset please cite **both** the individual researchers who provided the data as listed in the Citation column as well as the dataset.

5.1 Datasets Compiled (7/2017)

New citations for the 2018 dataset begin after citation 21 and new citations for the 2017 dataset begin after citation 11, all other citations were present in the July 2015 dataset.

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Expedition (US ITASE) Glaciochemical Data. Version 2. [US_ITASE_Core Info-SWE-Density_2013.xlsx]. Boulder, Colorado USA: National Snow and Ice Data Center.

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6.0 Combining datasets

Different datasets compiled were recorded to a different number of significant figures or precision yet all numbers in this dataset were standardized to a certain length. Measurements are accurate to four significant figures after the decimal place. Please use this as a standard when doing analysis of the data.

7.0 Acknowledgement

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