



Supplement of

Ice core evidence for a 20th century increase in surface mass balance in coastal Dronning Maud Land, East Antarctica

Morgane Philippe et al.

Correspondence to: Morgane Philippe (mophilip@ulb.ac.be)

The copyright of individual parts of the supplement might differ from the CC-BY 3.0 licence.

Supplementary materials



Fig. S1. Full vertical profile of water stable isotopes with, from left to right: a grey and black band indicating sections of sampling for major ions at 10 cm and 5 cm resolution, respectively; water stable isotopes, taken at 5

5 cm resolution for the entire core; major ions, taken at 5 cm resolution for discrete sections; normalized ECM conductivity (0.05 m running mean, expressed as multiple of standard deviation, σ); annual layer boundaries in the youngest (Green) and the oldest (Blue) estimates (each colour transition indicates a boundary).

10



Fig. S2. Full vertical profile, as in Fig. S1 but split in 17 sections for more visibility.









160 240

MSA (ppb)

nssSO₄ (ppb)

1200 0

NO3⁻ (ppb)

ECM (ơ)

4 6 8 Na⁺/SO₄⁼

12 0

1000 2000

Na⁺(ppb)

60 ∔ -200

-150

-100 -50 0

δD (‰)











93

94

95 --200 -150 -100

-50 0

Na⁺ (ppb)

δD (‰)



849

848

847

1846

1845

844

1843







Site name	Latituda	Longitude	Flavation	Deference		-3	Pacent pariod		3	Most recent			% change	% change	Mathod	Study
Site name	Latitude	Longhude	$(m \circ s 1)$	neriod	SMB (10) m	Recent period	SMB (10	⁻ m	most recent	SMB (10	m w.e.)	% change (50 a rof)	% change $(200 rof)$	Wiethou	Study
			(111 a.s.1.)	period	w.e.) (kg	g m ⁻² a ⁻¹)		w.e.) (kg 1	m ⁻² a ⁻¹)	period	$(\text{kg m}^2 \text{ a}^1)$)	(30a - 101)	(20a - 101) except**		
														слеері		
Siple Dome	-81.6530	-148.9980) 620	1890-1994	120		1922-1991	118					-1.67%		Ice core	Kaspari et al., 2004
ITASE00-5	-77.6830	-123.9950) 1828	1716-2000	140		1922-1991	141					0.71%		Ice core	Kaspari et al., 2004
ITAE99-1	-80.6200	-122.6300) 1350	1724-1998	139		1922-1991	146					5.04%		Ice core	Kaspari et al., 2004
ITASE00-4	-78.0830	-120.0800) 1697	1799-2000	189		1922-1991	193					2.12%		Ice core	Kaspari et al., 2004
RIDS C	-80.0100	-119.4300) 1530	1903-1995	112		1970-1995	108.35					-3.26%		Ice core	Kaspari et al., 2004
RIDS B	-79.4600	-118.0500) 1603	1922-1995	150		1970-1995	149.37					-0.42%		Ice core	Kaspari et al., 2004
RIDS A	-78.7300	-116.3300) 1740	1831-1995	235		1922-1991	234					-0.43%		Ice core	Kaspari et al., 2004
ITASE00-1	-79.3830	-111.2390) 1791	1653-2001	220		1922-1991	222					0.91%		Ice core	Kaspari et al., 2004
ITASE01-2	-77.8430	-102.9100) 1353	1890-2001	427		1922-1991	436					2.11%		Ice core	Kaspari et al., 2004
ITASE01-3	-78.1200	-95.6460) 1633	1859-2001	325		1922-1991	331					1.85%		Ice core	Kaspari et al., 2004
ITASE01-5	-77.0590	-89.1370) 1246	1780-2001	388		1922-1991	342					-11.86%		Ice core	Kaspari et al., 2004
ITASE01-6	-76.0970	-89.0170) 1232	**			1978-1990	395		1978-1999	392.6		-0.61%		Ice core	Kaspari et al., 2004
Gomez	-73.5900	-70.3600) 1400	1855-2006	720		1970s-2006	925		1997-2006	1100		28.47%	53%	Ice core	Thomas et al., 2008
Dver Plateau	-70.6700	-64.8900) 2002	1790-1989	549		1969-1989	593					8.00%		Ice core	Raymond et al., 1996
James Ross Island	-64.2200	-57.6800) 1640	1847-1980	443		1964-1990	578					30.47%		Ice core	Aristarain et al., 2004
R1	-78.3075	-46.2728	3 718	1816-1998	204	+7	*	204					0.00%		Ice core	Mulvanev et al., 2002
Berkner B25	-79.5700	-45.7200) 890	1816-1956	131		1965-1994	141					7.63%		Ice core	Ruth et al., 2004
A	-72.6500	-16.6333	60	**			1975-1989	380		1980-1989	350			-8%	Ice core	Isaksson & Melvold, 2002
E	-73.6000	-12.4333	3 700	**			1932-1991	324		1980-1991	277			-15%	Ice core	Isaksson & Melvold, 2002:
2	/2100000	1211000	, ,,,,				1,02 1,7,1	021		1,000 1,771				1070		Isaksson et al., 1996
B39	-71.4100	-9.9000) 655	**			1935-2007	818		1987-2007	818			0.00%	Ice core	Fernandov et al., 2010
FB0704	-72.0600	-9.5600) 760	**			1962-2007	489		1987-2007	489			0.00%	Ice core	Fernandov et al., 2010
BAS-depot	-77.0333	-9.5000) 2176	1816-1997	71		1965-1997	71					0.00%		Ice core	Hofstede et al., 2004
B04	-70.6200	-8.3700) 35	1892-1981	362	+95	1960-1980	325					-10.22%			Schlosser & Oerter, 2002
CV	-76.0000	-8.0500) 2400	1816-1997	62		1965-1997	68	+2	1992-1997	70		9.68%	13%	Ice core	Karlof et al., 2005
B38	-71.1600	-6.7000) 690	**			1960-2007	1257		1987-2007	1257			0.00%	Ice core	Fernandov et al., 2010
FB0702	-71.5700	-6.6700) 539	**			1959-2007	547		1987-2007	500			-9%	Ice core	Fernandov et al., 2010
FB9816	-75.0000	-3.5037	7 2740	1800-1997	47	+17	1950-1997	51.5***					9.57%		Ice core	Oerter et al., 2000
B31	-75.5800	-3.4300) 2669	1816-1997	58.4		1966-1989	59.8					2.40%		Ice core	Oerter et al., 2000
Н	-70.5000	-2.4500) 53	**			1953-1993	480		1980-1993	425			-11%	Ice core	Isaksson & Melvold, 2002
NUS08-2	-87.8500	-1.8000) 2583	1815-2007/8	67.4	+2.6	1963-2007/8	63.4	+4.2				-5.93%		Ice core	Anschutz et al., 2011
\$32	-70.3100	-0.8000) 53	**			1995-2009	339	+36		318			-6%	Ice core	Schlosser et al., 2014
G3	-69.8230	-0.6120) 57	**			1993-2009	295	+29		288			-2%	Ice core	Schlosser et al., 2014
FB9815	-74.9492	-0.5055	5 2840	1801-1997	59	+24	1950-1997	65***					10.17%		Ice core	Oerter et al. 2000
G4	-70.9020	-0.4020) 60	**	• /		1983-2009	330	+21		323			-2%	Ice core	Schlosser et al., 2014
M2	-70.3160	-0.1090) 73	**			1981-2009	315	+22		302			-4%	Ice core	Schlosser et al., 2014
G5	-70.5450	-0.0410) 82	**			1983-2009	298	+21		290			-3%	Ice core	Schlosser et al., 2014
K	-70.7500	0.0000) 53	**			1954-1996	254		1980-1996	250			0%	Ice core	Isaksson & Melvold, 2002
SPS	-90,0000	0.0000	2850	1816-1956	76 5		1965-1994	84.8	+33	1992-1997	84 5	+8.9	10 85%	10%	Ice core and poles	Mosley & Thompson 1999
B32	-75 0023	0.0070	2830	1816-1997	63		1966-1997	80	_0.0	1772 1777	01.5	_0.9	26.98%	1070	Ice core	Oerter et al 2000
EPICA DML	-75 0020	0.0070	2332	1915-2008	73		1964-2008	73.1	+17				0 14%		Firn core and radar	Fujita et al 2011
FB9808	-74 7507	0.0000	2774 R 2860	1801-1997	68	+22	1950-1997	74 5***					9 56%		Ice core	Oerter et al. 2000
FB9809	-74 4997	1 9608	2000 3 2843	1801-1997	89	+29	1950-1997	97 5***					9 55%		Ice core	Oerter et al. 2000
$FPIC\Delta$ (Amundsonison)	-75 0000	2 0000) 2045	1865-1965	78	<u>-</u> 2)	1966-1001	76					-2 56%		Ice core	Isaksson et al. 1006
G8	-70.4100	2.000) <u>5</u> 900	**	70		1001_2000	282	+26		273		-2.5070	_30%	Ice core	Schlosser et al. 2014
00	-70.4100	2.0100	, ,0	I.			1771-2007	202	±20		215		1	-570		501105501 01 al., 2014

Table S1. Sites information and SMB values *no significant trend during the 20th century **short record: only recent periods are compared ***when only a stacked SMB change is given, SMB from individual ice cores are inferred from the stacked record as if it was the same trend for all ice cores. Ref : reference period. Numbers in italic are inferred from the trend given in the referenced paper

Martin	Site name	Latitude	Longitude	Elevation	Reference	SMB (10) ⁻³ m	Recent period	SMR (10 ⁻³	m	Most recent	SMB (10) ⁻³ m w a)	% change	% change	Method	Study
Head No.100 No.1102 No	Site nume	Luttude	Longitude	(masl)	period		-2 -1	Recent period		-2 -1	neriod	-2	-1	(50a - ref)	(20a - ref)	Wethou	Study
bellopi - - - - </th <th></th> <th></th> <th></th> <th>(111 0.5.1.)</th> <th>period</th> <th>w.e.) (kg</th> <th>gma)</th> <th></th> <th>w.e.) (kg m</th> <th>a)</th> <th>period</th> <th>(kg m a</th> <th>ι)</th> <th>(504 101)</th> <th>except**</th> <th></th> <th></th>				(111 0.5.1.)	period	w.e.) (kg	gma)		w.e.) (kg m	a)	period	(kg m a	ι)	(504 101)	except**		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$																	
C 7.2.5.87. 3.0.10 200 985.196 11 985.196 12 985.196 12<	FB9814	-75.083	7 2.501	7 2970	1801-1997	64	±21	1950-1997	71***					10.94%		Ice core	Oerter et al., 2000
D D S2.08 3.08 3.09 09 09.09 0 </td <td>С</td> <td>-72.2583</td> <td>3 2.891</td> <td>1 2400</td> <td>1955-1996</td> <td>119</td> <td></td> <td>1965-1996</td> <td>123</td> <td></td> <td></td> <td></td> <td></td> <td>3.36%</td> <td></td> <td>Ice core</td> <td>Isaksson et al., 1999</td>	С	-72.2583	3 2.891	1 2400	1955-1996	119		1965-1996	123					3.36%		Ice core	Isaksson et al., 1999
DMLMS -7.2739 -3.283 271 With M 60 -10 60 -10 Montpace -10 Montpace	D	-72.5083	3 3.000	2610	1955-1996	112		1965-1996	116					3.57%		Ice core	Isaksson et al., 1999
E -7.2.6739 3.6.83 27.11 95.9.95 95.9 96.9 -9 96.9 -9 97.9 9	DML08	-75.7528	8 3.2828	8 2971	1919-96	60	±19	*	60					0.00%		Ice core	Oerter et al., 1999
DMLQ PM463 PM463 PM464 PM464 PM464 PM464 PM470 PM470 PM470 PM470 PM470 PM470 PM470 PM4700 PM47000 PM47000 PM47000 PM47000 <	E	-72.6750	0 3.6628	8 2751	1955-1996	55		1965-1996	59					7.27%		Ice core	Isaksson et al., 1999
PBNRIM PLACATZ V. Mor V. Mor V. Mor V. Mor Macro	DML02	-74.968	3 3.918	5 3027	1919-95	59	±14	*	59					0.00%		Ice core	Oerter et al., 1999
F 7.2883 8.18 1.89 8.18 1.99 1.95 9.10 9.1 <t< td=""><td>FB9810</td><td>-74.6672</td><td>2 4.001</td><td>7 2980</td><td>1801-1997</td><td>86</td><td>±29</td><td>1950-1997</td><td>94.5***</td><td></td><td></td><td></td><td></td><td>9.88%</td><td></td><td>Ice core</td><td>Oerter et al., 2000</td></t<>	FB9810	-74.6672	2 4.001	7 2980	1801-1997	86	±29	1950-1997	94.5***					9.88%		Ice core	Oerter et al., 2000
Shot -7.233 -8.00 -8.0 -7.247 -7.140 -1.14	F	-72.8583	3 4.3514	4 2840	1955-1996	23		1965-1996	24					4.35%		Ice core	Isaksson et al., 1999
S20 70.2417 4.844 00 105.900 271 106.1900 271 2.218 Learner Learner Learner FR061 75.1673 5.040 2.00 105.900 4 106.1900 105.900 107.8 Learner Learner Learner Learner FR061 75.017 5.044 2.00 105.900 10 100.190 10 10.901 10.901 10.901 HB07 6.403 0.01 10.901 10.901 10.901 10.901 10.901 10.901 10.901 B23 7.107 6.403 0.01 10.901	S100	-70.2333	3 4.8000) 48	1816-2000	292		1956-2000	284		1991-2000	260	± 80	-2.74%	-11%	Ice core	Kaczmarska et al., 2004
Field Field Second Second Second Field Second Field Second Field Second	S20	-70.2417	7 4.811	1 63	1955-1996	271		1965-1996	265					-2.21%		Ice core	Isaksson et al., 1999
FBORIS	FB0601	-75.2470	0 4.8440	3090	1915-2008	52		1964-2008	51.6 ±	±1.2				-0.77%		Firn core and radar	Fujita et al., 2011
G -73.047 5.049 2959 957-196 957-196 957-196 957-197 977-197 978-197 97	FB9813	-75.1673	3 5.0033	3 3100	1816-1997	48		1950-1997	53***					10.42%		Ice core	Oerter et al., 2000
 Basson 4, 73 2503 Monus 263 Bull-1997 Solas 264 Basson 4, 1990 	G	-73.041	7 5.0442	2 2929	1955-1996	28		1965-1996	30					7.14%		Ice core	Isaksson et al., 1999
H 973.917 6.4666 771.07 6.4667 771.07 6.4667 771.07 6.4667 711.07 853 161.1997 85 16 1950.1997 6.47 193.37 10.397 10.2000.0000000000000000000000000000000	FB9804	-75.250	3 6.000	2630	1801-1997	50	±16	1950-1997	55***					10.00%		Ice core	Oerter et al., 2000
B33 75.167 6.489 516.197 45.9 45.9 966.1989 55 55 56.3 16.309 16.009 16.009 16.009 16.009 16.009 16.009 0000 16.009 0000 16.009 0000 0000 16.009 0000 </td <td>Н</td> <td>-73.391</td> <td>7 6.460</td> <td>5 3074</td> <td>1955-1996</td> <td>44</td> <td></td> <td>1965-1996</td> <td>46</td> <td></td> <td></td> <td></td> <td></td> <td>4.55%</td> <td></td> <td>Ice core</td> <td>Isaksson et al., 1999</td>	Н	-73.391	7 6.460	5 3074	1955-1996	44		1965-1996	46					4.55%		Ice core	Isaksson et al., 1999
base <	B33	-75,167(0 6.498	5 3160	1816-1997	45.9		1966-1989	55					19.83%		Ice core	Oerter et al., 2000, Sommer et
Ham 75,0840 6,5800 810 901-1097 58 +16 901-1097 6/3**		15.101			1010 1997			-/00 1/0/	~~					- 2.0070			al. 2000
DML00 -55 333 7.2130 158 1991-1996 45 -12 4 -12 4 -12 4 -12 4 -12 -	FB9811	-75 084(6 5000	3160	1801-1997	58	+16	1950-1997	64***					10 34%		Ice core	Oerter et al. 2000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	DMI 09	-75 933	3 7 2130	3156	1897-1996	45	+12	*	45					0.00%		Ice core	Oerter et al. 1999
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	DML10	-75 216	7 7 2130	3364	1900-96	43	+11	*	47					0.00%		Ice core	Oerter et al. 1999
JABLAN1.2.1.7 <t< td=""><td>DML04</td><td>-7/ 300</td><td>7 - 7.213</td><td>5 3170</td><td>1905-1996</td><td>53</td><td>±11 ±15</td><td>*</td><td>53</td><td></td><td></td><td></td><td></td><td>0.00%</td><td></td><td>Ice core</td><td>Oerter et al. 1999</td></t<>	DML04	-7/ 300	7 - 7.213	5 3170	1905-1996	53	±11 ±15	*	53					0.00%		Ice core	Oerter et al. 1999
N N	I I	-73.800	8 7.940	5 3177	1955-1996	52	±15	1065-1006	53					1 02%		Ice core	Isaksson et al. 1999
NABOP1 PA 200	NUISO7 1	-75.8008	7.9400	3 3174	1815 2007/8	52	±2	1963 2007/08	550	⊥ 3 0				7 50%		Ice core	Anschutz et al. 2000
Jan 1 Jan 1 <thjan 1<="" th=""> <thjan 1<="" th=""> <thj< td=""><td>Site I</td><td>74.7200</td><td>7 7 083</td><td>3 3174</td><td>1815 2007</td><td>52</td><td>⊥∠ ⊥1 3</td><td>1963 2007</td><td>56</td><td>±3.9 ±4.7</td><td>1001 2007</td><td>52</td><td></td><td>7.50%</td><td>0%</td><td>Ice core</td><td>Anschutz et al., 2009</td></thj<></thjan></thjan>	Site I	74.7200	7 7 083	3 3174	1815 2007	52	⊥∠ ⊥1 3	1963 2007	56	±3.9 ±4.7	1001 2007	52		7.50%	0%	Ice core	Anschutz et al., 2009
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	DMI 06	-/3./10	7 8 005	2 2246	1813-2007	50	±1.5	1903-2007	50 ⊒	±4./	1991-2007	32		7.09%	0%	Ice core	Alischutz et al., 2009
NUSBOD 51,700 54,740 73,920 647 1952007,8 92,2 23,73 23,74 102 All concert all, 199 FB0003 75,1170 9,7240 3300 1952-1096 44 1965-1996 45 44 7,32% Fin core and radar Figita et al., 2011 FB0003 74,417 12,709 3406 1955-1996 45 1965-1996 41 -7,32% Fin core and radar Figita et al., 2011 A28 -74,617 14,7420 3466 1955-1996 45 1965-1996 41 -7,5000 16,7 Fin core and radar Figita et al., 2011 A28 -74,617 14,7420 3466 1955-1996 41 -1,05 1992-2000 66 -1,1 1,06% 16,6 core Kakson et al., 1999 A20 -74,9706 14,956 3470.4 1816-1884 40 1955-2000 40 1992-2000 53 -1,1 1,06% 16,6 core Kakson et al., 1999 M150 -74,9901 15,0007 3453 1951-196 45 192-2000 46 -1,76%		-73.000	7 0.003	3 3240	1815 2007/8	20.2	±14	1062 2007/9	30 40.2	24				0.00%			Anachutz et al. 2011
-74,441 $9,471$ 3.30 $925-1976$ 44 $1965-1976$ 43 24 $1205-1976$ $1205-1976$ 43 240 $1205-1976$ $1205-1976$ 43 240 $1205-1976$ $1105-1976$ $1205-1976$	NUS08-0	-81.7000	0 8.3700 7 0.401/	J 2447	1813-2007/8	39.Z	±1.3	1905-2007/8	49.2 ±	±3.4				23.31%			Allschutz et al., 2011
Fn0005 -15.11/0 9.740 3.300 1915-2008 41 1964-2008 3.8 19.9 $= 74, 2583$ 1011 cold and real in 2011 K -74, 3583 11.036 3314 1955.1996 45 1965.1996 41 - -8.89% Ice core Iaksson et al., 1999 A28 -74, 8617 14,7420 346 1915-2008 44 1965-2000 30 1992-2000 46 - -2.50% 15% Ice core Kakson et al., 2007 MC -75,0102 14,8865 3470.4 1816-1884 42 1955-2000 40 1992-2000 53 - 4,76% 26% Ice core Karlof et al., 2005 MD -74,900 14.9964 3470 1816-1884 42 1955-2000 42 1992-2000 50 ±1.1 12,79% Ice core Karlof et al., 2005 M150 -74,9901 15,0017 3453 1955.1955 51 1965-1997 45 - 112,79% Ice core Karlof et al., 2005 NUS08-5 -82,6300 17.8700 2541 1815-20078	J	-74.041	7 9.491 0 7 2 4	/ 3208	1955-1996	44		1965-1996	45 ±	±4				2.27%		The core	Isaksson et al., 1999
K -74.3637 11.03 3.341 1955-1996 43 1955-1996 41 -88.8% 162 core Islasson et al., 1999 A28 -74.6417 14.742 3466 1915-2008 44 1964-2008 45.5 ± 1 1.14% Fine core Islasson et al., 1999 A28 -74.8417 14.742 3466 1915-2008 44 1955-2000 39 1992-2000 53 -4.76% 26% Ice core Karlof et al., 2005 MD -74.9000 15.0007 3470 1816-1884 41 9.1 1955-2000 41 992-2000 53 -4.76% 26% Ice core Karlof et al., 2005 MI50 -74.9917 15.0017 3453 1955-1955 51 1965-1996 45 - 1992-2000 46 - 7.6% 18% Ice core Karlof et al., 2005 MI50 -74.9917 15.017 34704 1816-1884 39 1955-2000 42 1992-2000 46 - 7.6% 18% Ice core Karlof et al., 2005 NU508-5 5.8114 3	FB0603	-/5.11/0	9.7240	J 3300	1915-2008	41		1964-2008	<u>38</u> ⊒	±0.9				-7.32%		Firn core and radar	Fujita et al., 2011
L -74,8617 12,708 3406 195-1996 43 1965-1996 44 -74,8617 28,89% Ce core Baskson et al., 1999 A28 -74,8617 14,7420 3460 1955-2008 34 1962-2000 36 -2.50% 15% Ice core Karlof et al., 2005 MD -74,9706 14.9567 3470.8 1816-1884 42 1955-2000 40 1992-2000 53 -4.76% 26% Ice core Karlof et al., 2005 MI50 -74.9907 15.0007 3470 1816-1884 42 1965-1996 45 -11.76% Ice core Karlof et al., 2005 MI50 -74.9917 15.017 3473 1816-1884 42 1955-2000 42 1992-2000 46 -7.69% 18% Ice core Karlof et al., 2005 MA -74.9817 15.113 3470.4 1816-1884 42 1955-2007 42 1992-2000 46 -7.69% 18% Ice core Karlof et al., 2005 MI50 -7.5024 15.843 1815-2078 36.7 40.9 1962-2078 <td< td=""><td>K</td><td>-/4.358.</td><td>3 11.1030</td><td>5 3341</td><td>1955-1996</td><td>45</td><td></td><td>1965-1996</td><td>41</td><td></td><td></td><td></td><td></td><td>-8.89%</td><td></td><td>Ice core</td><td>Isaksson et al., 1999</td></td<>	K	-/4.358.	3 11.1030	5 3341	1955-1996	45		1965-1996	41					-8.89%		Ice core	Isaksson et al., 1999
A28 -14,801/ 14,420 366 1915-2008 44 1964-2008 ± 1 $= 11,16\%$ Fm core and radar Fujita et al., 2011 MC -75,0112 14,8865 3470.4 1816-1884 40 1955-2000 39 1992-2000 53 -4,76% 26% Ice core Karlof et al., 2005 MD -75,0102 14,9964 3470 1816-1884 41 ± 0.7 1955-2000 40 1992-2000 50 ± 1.1 0.00% 22% Ice core Karlof et al., 2005 M150 -74,9900 15.0000 3470 1816-1884 41 ± 0.7 1955-2000 42 1992-2000 46 -11.76% Ice core Karlof et al., 2005 MA -74.9907 15.0017 3453 1955-1965 51 1955-2000 42 1992-2000 46 -7.69% 18% Ice core Karlof et al., 2005 MA -74.9877 15.134 34704 1816-1884 32 1955-2000 42 1992-2000 46 -13.76% Ice core Karlof et al., 2005 NUS08.4 -82.	L	-/4.641	/ 12./908	3406	1955-1996	45		1965-1996	41					-8.89%		Ice core	Isaksson et al., 1999
MC -75.0112 14.8865 347.04 1816-1884 40 1955-2000 39 1992-2000 66 -2.50% 15% lee core Karlof et al., 2005 MD -74.9706 14.9567 3470.8 1816-1884 41 ± 0.7 1955-2000 41 ± 0.5 1992-2000 53 4.76% 26% lee core Karlof et al., 2005 M150 -74.9706 15.0007 3470 1816-1884 41 ± 0.7 1955-2000 42 1992-2000 50 ± 1.1 0.00% 22% lee core Karlof et al., 2005 MI -74.9917 15.007 3473 1816-1884 39 1955-1907 42 1992-2000 46 -11.76% lee core Karlof et al., 2005 MB -75.0294 15.043 3470.4 1816-1884 42 1955-2000 42 1992-2000 48 ± 1.3 0.00% 14% lee core Karlof et al., 2005 NUS08-4 -82.6100 17.8700 2544 1815-20078 35 ± 0.3 ± 2.1 -1.63% lee core Anschuz et al., 2	A28	-/4.861	/ 14.7420	3466	1915-2008	44		1964-2008	44.5 ±	±I				1.14%		Firn core and radar	Fujita et al., 2011
MD -74,9706 14,9567 3470.8 1816-1884 42 1955-2000 40 1992-2000 53 -4,76% 26% Lee core Karlof et al., 2005 M150 -74,9900 15,0000 3470 1816-1884 41 ± 0.7 1955-2000 41 ± 0.5 1992-2000 53 ± 1.1 0.00% 22% Lee core Karlof et al., 2005 M150 -74,9900 15,0017 3433 1955-1965 51 1965-1997 48,5 ± 1.5 190.00% 22% Lee core Karlof et al., 2005 MB -75,0294 15,0435 3470.5 1816-1884 42 1955-2000 42 1992-2000 46 ± 1.3 0.00% 18% Lee core Karlof et al., 2005 NUS08-5 -82,6300 17.8700 2544 1816-1884 42 $\pm 1955-2007.8$ 36.1 ± 2.1 $1992-2000$ 46 ± 1.3 0.00% 18% Lee core Karlof et al., 2005 NUS08-5 -82,6300 17.8700 2544 1815-2007.8 35 ± 0.5 1963-2007.8 36.1	MC	-/5.0112	2 14.886	5 3470.4	1816-1884	40		1955-2000	39		1992-2000	46		-2.50%	15%	Ice core	Karlof et al., 2005
M -/5.0000 14.9964 3470 1816-1884 41 ± 0.7 1955-2000 41 ± 0.5 1992-2000 50 ± 1.1 0.00% 22% lee core Kanfer et al., 2005 M150 -74.9900 15.0017 3433 1955-1965 51 1965-1997 48.5 1972-2000 46 12.79% lee core Iaskson et al., 1999 MB -75.0294 15.013 3470.5 1816-1884 39 1955-2000 42 1992-2000 48 ± 1.3 0.00% 14% lee core Kanfer et al., 2005 MA -74.9887 15.1134 3470.4 1816-1884 42 1955-2000 42 1992-2000 48 ± 1.3 0.00% 14% lee core Kanfer et al., 2005 NUS08-5 -82.6300 17.8700 2544 1815-2007/8 36.7 ± 2.3 $= 2.3$ -1.63% lee core Anschutz et al., 2011 NUS08-5 -82.6300 17.8700 2645 1815-2007/8 36.7 ± 2.3 $= 1.63\%$ lee core Anschutz et al., 2011 NUS07-2 -76	MD	-74.9700	b 14.956	/ 3470.8	1816-1884	42	c -	1955-2000	40	0.7	1992-2000	53		-4.76%	26%	Ice core	Karlot et al., 2005
M150 $-74,9900$ $15,0000$ 3470 $1816-1997$ 43 $1965-1997$ 48.5 12.79% lec core Hofsted et al., 2004 M -74.9917 15.017 3453 $995-1995$ 51 $1965-1996$ 45 11.76% lec core Karlof et al., 2005 MB -75.0294 15.1134 3470.5 $1816-1884$ 42 $1955-2000$ 42 $1992-2000$ 46 7.43% lec core Karlof et al., 2005 MA -74.9877 15.1134 3470.4 $1815-2007/8$ 35 ± 0.8 $1963-2007/8$ 36.6 ± 2.1 7.43% lec core Anschut et al., 2011 NUS08-5 -82.8167 18.9000 2552 $1815-2007/8$ 35 ± 0.8 $1963-2007/8$ 36.1 ± 2.1 1.63% $1.62\%\%$ lec core Anschut et al., 2011 NUS08-5 -84.1300 22.0000 2652 $1815-2007/8$ 35 ± 0.9 $90.92-2007$ 41.9 $12.0\%\%$ Ice core Anschut et al., 2011 NUS07-2 -76.0600 22.4590 <th< td=""><td>M</td><td>-75.000</td><td>U 14.9964</td><td>4 3470</td><td>1816-1884</td><td>41</td><td>±0.7</td><td>1955-2000</td><td>41 ±</td><td>±0.5</td><td>1992-2000</td><td>50</td><td>±1.1</td><td>0.00%</td><td>22%</td><td>Ice core</td><td>Karlot et al., 2005</td></th<>	M	-75.000	U 14.9964	4 3470	1816-1884	41	±0.7	1955-2000	41 ±	±0.5	1992-2000	50	±1.1	0.00%	22%	Ice core	Karlot et al., 2005
M -74.9917 15.0017 3453 1955-1965 51 1965-1996 45 -11.76% Ice core Isaksson et al., 1999 MB -75.0294 15.0435 3470.5 1816-1884 39 1955-2000 42 1992-2000 46 7.69% 18% Ice core Karlof et al., 2005 MA -74.987 15.113 3470.4 1816-1884 42 1955-2000 42 1992-2000 46 7.69% 18% Ice core Karlof et al., 2005 MUS08-5 -82.6300 17.8700 254 1815-2007/8 36.7 ± 0.8 ± 3.1 ± 2.1 -11.63% Ice core Anschutz et al., 2011 NUS08-3 -84.1300 22.000 2625 1815-2007/8 36.7 ± 0.9 ± 0.9 ± 2.1 -16.3% Ice core Anschutz et al., 2011 NUS08-3 -84.1300 22.0400 3586 1915-2008 31 ± 1.9 $963-2007/8$ 92.4 93.2088 41.9 ± 2.8 Ice core Anschutz et al., 2011 NUS07-3 -76.0700 22.4700 3586 1286-2007/	M150	-74.9900	15.000	3470	1816-1997	43		1965-1997	48.5					12.79%		Ice core	Hofstede et al., 2004
MB -75.0294 15.0435 3470.5 1816-1884 39 1955-2000 42 1992-2000 46 7.69% 18% Lee core Karlof et al., 2005 MA -74.9887 15.1134 3470.4 1816-1884 42 1955-2000 42 1992-2000 48 ± 1.3 0.00% 14% Lee core Karlof et al., 2005 NUS08-5 -82.6300 17.8700 2544 1815-2007/8 36.7 ± 0.9 1963-2007/8 36.1 ± 2.1 -16.3% Lee core Anschutz et al., 2011 NUS08-3 -82.6167 18.900 22.05 1815-2007/8 36.1 ± 1.1 1963-2007/8 45.3 ± 3.1 12.97% Lee core Anschutz et al., 2011 NUS08-3 -76.0660 22.4590 3586 1915-2008 35 1964-2008 39.2 ± 0.9 192-2012 -15.15% Lee core Anschutz et al., 2011 NUS07-2 -76.0700 22.4700 3589 1815-2007/8 33 ± 0.7 1963-2007/8 28 ± 2.1 -51.5% Lee core Anschutz et al., 2011 NUS	M	-74.9917	7 15.001	7 3453	1955-1965	51		1965-1996	45					-11.76%		Ice core	Isaksson et al., 1999
MA -74,987 15,1134 3470.4 1816-1884 42 1955-2000 42 1992-2000 48 ± 1.3 0.00% 14% Ice core Karlof et al., 2005 NUS08-5 -82,6300 17.8700 2544 1815-2007/8 36.7 ± 0.8 1963-2007/8 36.1 ± 2.3 - - -1.63% Ice core Anschutz et al., 2011 NUS08-4 -82,8167 18.900 22.50 1815-2007/8 36.7 ± 0.9 1963-2007/8 36.1 ± 2.1 - -1.63% Ice core Anschutz et al., 2011 NUS08-3 -84,1300 22.000 2625 1815-2007/8 36.1 ± 2.1 - 12.97% Ice core Anschutz et al., 2011 NUS07-2 -76.0660 22.4590 358 1915-2008 35 ± 0.7 1963-2007/8 28 ± 2.7 - 15.15% Ice core Anschutz et al., 2011 NUS07-2 -76.0700 22.4700 3580 1815-2007/8 33.1 ± 1.0 1964-2008 38.7 ± 0.9 1993-2008 41.9 ± 2.8 16.92% 27%	MB	-75.0294	4 15.043	5 3470.5	1816-1884	39		1955-2000	42		1992-2000	46		7.69%	18%	Ice core	Karlof et al., 2005
NUS08-5-82.630017.870025441815-2007/835 ± 0.8 1963-2007/837.6 ± 2.3 7.43%Ice coreAnschutz et al., 2011NUS08-4-82.816718.900025521815-2007/836.7 ± 0.9 1963-2007/836.1 ± 2.1 -1.63%Ice coreAnschutz et al., 2011NUS08-3-84.130022.000026251815-2007/840.1 ± 1 1963-2007/845.3 ± 3.1 12.97%Ice coreAnschutz et al., 2011A35-76.066022.459035861915-2008351964-200839.2 ± 0.9 ± 2.8 12.00%Firn core and radarFujia et al., 2011NUS07-2-76.070022.470035221815-2007/833.1 ± 1.0 1964-200838.7 ± 0.9 1993-2008 41.9 ± 2.8 16.92%27%Firn core and radarFujia et al., 2011NUS07-3-77.000026.050035891815-2007/822 ± 0.5 1963-2007/823.7 ± 1.7 .7.3%Ice coreAnschutz et al., 2011NUS07-3-77.000026.050435891816-2012480 ± 10.9 1955-2012680 ± 2.0 19.2%19.4%Ice coreAnschutz et al., 2011NUS07-4-76.794011.900037411286-200828.7 ± 0.9 1992-2012680 ± 70.8 12.5%42%Ice coreAnschutz et al., 2011NUS07-4-76.794031.900037411286-200828.7 ± 0.9	MA	-74.988	7 15.1134	4 3470.4	1816-1884	42		1955-2000	42		1992-2000	48	±1.3	0.00%	14%	Ice core	Karlof et al., 2005
NUS08-4 -82.8167 18.900 2552 1815-2007/8 36.7 ± 0.9 1963-2007/8 36.1 ± 2.1 $= 1.63\%$ Ice core Anschutz et al., 2011 NUS08-3 -84.1300 22.0000 2625 1815-2007/8 40.1 ± 1 1963-2007/8 45.3 ± 3.1 12.97% Ice core Anschutz et al., 2011 A35 -76.0660 22.4700 3586 1915-2008 35 1964-2008 39.2 ± 0.9 12.00% Fin core and radar Fujita et al., 2011 NUS07-2 -76.0700 22.4700 3582 1815-2007/8 33 ± 0.7 1963-2007/8 28 ± 2 -15.15% Ice core Anschutz et al., 2011 NUS07-3 -77.0000 26.500 3589 1815-2007/8 22 ± 0.5 1963-2007/8 23.7 ± 1.7 7.3% Ice core Anschutz et al., 2011 NUS07-3 -77.0000 26.0500 3589 1815-2007/8 22 ± 0.5 1963-2007/8 23.7 ± 1.7 7.3% Ice core Anschutz et al., 2019 IC12 -70.2458 26.349	NUS08-5	-82.6300	0 17.8700	0 2544	1815-2007/8	35	± 0.8	1963-2007/8	37.6 ±	±2.3				7.43%		Ice core	Anschutz et al., 2011
NUS08-3-84.130022.00002625 $1815-2007/8$ 40.1 ± 1 $1963-2007/8$ 45.3 ± 3.1 12.97%Ice coreAnschutz et al., 2011A35-76.066022.45903586 $1915-2008$ 35 $1964-2008$ 39.2 ± 0.9 12.00%Firn core and radarFujita et al., 2011NUS07-2-76.070022.47003582 $1815-2007/8$ 33 ± 0.7 $1963-2007/8$ 28 ± 2 -15.15%Ice coreAnschutz et al., 2011MP-75.888025.83403661 $1286-2008$ 33.1 ± 1.0 $1964-2008$ 38.7 ± 0.9 $1993-2008$ 41.9 ± 2.8 16.92% 27% Firn core and radarFujita et al., 2011NUS07-3-77.000026.05003589 $1815-2007/8$ 22 ± 0.5 $1963-2007/8$ 23.7 ± 1.7 7.73% Ice coreAnschutz et al., 2009IC12-70.245826.3349450 $1816-2012$ 480 ± 10 $1955-2012$ 630 ± 20 $1992-2012$ 680 ± 70 31.25% 42% Ice coreThis paperDK190-76.7940 31.9000 3741 $1286-2008$ 28.7 ± 0.9 $1953-2007/8$ 41.1 ± 2.3 19% 19% 19% NUS07-4-78.2167 32.8500 3595 $1815-2007/8$ 19.65 $1963-2007/8$ 17.5 ± 1.2 -7.89% Ice coreAnschutz et al., 2009NUS07-5-78.6500 35.6300 3619 $1815-20$	NUS08-4	-82.816	7 18.9000	2552	1815-2007/8	36.7	±0.9	1963-2007/8	36.1 ±	± 2.1				-1.63%		Ice core	Anschutz et al., 2011
A35-76.06022.459035861915-2008351964-200839.2 ± 0.9 12.00%Fin core and radarFujita et al., 2011NUS07-2-76.070022.470035821815-2007/833 ± 0.7 1963-2007/828 ± 2 -15.15% Ice coreAnschutz et al., 2011MP-75.880025.83403611286-200833.1 ± 1.0 1964-200838.7 ± 0.9 1993-2008 41.9 ± 2.8 16.92% 27%Firn core and radarFujita et al., 2011NUS07-3-77.000026.050035891815-2007/822 ± 0.5 1963-2007/823.7 ± 1.7 7.73% Ice coreAnschutz et al., 2009IC12-70.245826.33494501816-2012480 ± 10 1955-2012630 ± 20 1992-2012680 ± 70 31.25%42%Ice coreThis paperDK190-76.794031.900037411286-200828.7 ± 0.9 $193-2007/8$ 34.1 ± 2.3 19%Firn core and radarFujita et al., 2011NUS07-4-78.216732.850035951815-2007/819 ± 0.5 1963-2007/8 17.5 ± 1.2 -7.89% Ice coreAnschutz et al., 2009NUS07-5-78.650035.630036191815-2007/824 ± 0.5 1963-2007/820.1 ± 1.4 -16.25% Ice coreAnschutz et al., 2011	NUS08-3	-84.1300	0 22.000	2625	1815-2007/8	40.1	± 1	1963-2007/8	45.3 ±	±3.1				12.97%		Ice core	Anschutz et al., 2011
NUS07-2-76.070022.470035821815-2007/833 ± 0.7 1963-2007/828 ± 2 $= -15.15\%$ Ice coreAnschutz et al., 2011MP-75.888025.834036611286-200833.1 ± 1.0 1964-200838.7 ± 0.9 1993-2008 41.9 ± 2.8 16.92% 27%Firn core and radarFujita et al., 2011NUS07-3-77.000026.050035891815-2007/822 ± 0.5 1963-2007/823.7 ± 1.7 16.92% 27%Firn core and radarFujita et al., 2011IC12-70.245826.33494501816-2012480 ± 10 1955-2012630 ± 20 1992-2012680 ± 70 31.25% 42%Ice coreAnschutz et al., 2009DK190-76.794031.900037411286-200828.7 ± 0.9 $1993-2008$ 34.1 ± 2.3 19% 19%Firn core and radarFujita et al., 2011NUS07-4-78.216732.850035951815-2007/819 ± 0.5 1963-2007/8 17.5 ± 1.2 -7.89% Ice coreAnschutz et al., 2009NUS07-5-78.650035.630036191815-2007/824 ± 0.5 1963-2007/8 20.1 ± 1.4 -1.4 -16.25% Ice coreAnschutz et al., 2011	A35	-76.066	0 22.4590	3586	1915-2008	35		1964-2008	39.2 ±	±0.9				12.00%		Firn core and radar	Fujita et al., 2011
MP -75.8880 25.8340 3661 1286-2008 33.1 ±1.0 1964-2008 38.7 ±0.9 1993-2008 41.9 ±2.8 16.92% 27% Firn core and radar Fujita et al., 2011 NUS07-3 -77.0000 26.0500 3589 1815-2007/8 22 ±0.5 1963-2007/8 23.7 ±1.7 7.73% Ice core Anschutz et al., 2009 IC12 -70.2458 26.3349 450 1816-2012 480 ±10 1955-2012 630 ±20 1992-2012 680 ±70 31.25% 42% Ice core This paper DK190 -76.7940 31.9000 3741 1286-2008 28.7 ±0.9 1993-2007/8 34.1 ±2.3 19% Firn core and radar Fujita et al., 2011 NUS07-4 -78.2167 32.8500 3595 1815-2007/8 19 ±0.5 1963-2007/8 17.5 ±1.2 -7.89% Ice core Anschutz et al., 2009 NUS07-5 -78.6500 35.6300 3619 1815-2007/8 24 ±0.5 1963-2007/8 20.1 ±1.4 -16.25%	NUS07-2	-76.0700	0 22.4700	3582	1815-2007/8	33	±0.7	1963-2007/8	28 =	±2				-15.15%		Ice core	Anschutz et al., 2011
NUS07-3 -77.000 26.050 3589 1815-2007/8 22 ±0.5 1963-2007/8 23.7 ±1.7 Ice core Anschutz et al., 2009 IC12 -70.2458 26.3349 450 1816-2012 480 ±10 1955-2012 630 ±20 1992-2012 680 ±70 31.25% 42% Ice core Anschutz et al., 2009 DK190 -76.7940 31.9000 3741 1286-2008 28.7 ±0.9 ±1.2 1993-2008 34.1 ±2.3 19% Firn core and radar Fujita et al., 2011 NUS07-4 -78.2167 32.8500 3595 1815-2007/8 19 ±0.5 1963-2007/8 17.5 ±1.2 -7.89% Ice core Anschutz et al., 2009 NUS07-5 -78.6500 35.6300 3619 1815-2007/8 24 ±0.5 1963-2007/8 20.1 ±1.4 -16.25% Ice core Anschutz et al., 2011	MP	-75.8880	0 25.8340	3661	1286-2008	33.1	± 1.0	1964-2008	38.7 ±	±0.9	1993-2008	41.9	± 2.8	16.92%	27%	Firn core and radar	Fujita et al., 2011
IC12 -70.2458 26.3349 450 1816-2012 480 ±10 1955-2012 630 ±20 1992-2012 680 ±70 31.25% 42% Ice core This paper DK190 -76.7940 31.9000 3741 1286-2008 28.7 ±0.9 1993-2008 34.1 ±2.3 19% Firn core and radar Fujita et al., 2011 NUS07-4 -78.2167 32.8500 3595 1815-2007/8 19 ±0.5 1963-2007/8 17.5 ±1.2 -7.89% Ice core Anschutz et al., 2009 NUS07-5 -78.6500 35.6300 3619 1815-2007/8 24 ±0.5 1963-2007/8 20.1 ±1.4 -16.25% Ice core Anschutz et al., 2011	NUS07-3	-77.0000	0 26.0500	3589	1815-2007/8	22	±0.5	1963-2007/8	23.7 ±	±1.7				7.73%		Ice core	Anschutz et al., 2009
DK190 -76.7940 31.900 3741 1286-2008 28.7 ± 0.9 1993-2008 34.1 ±2.3 19% Firn core and radar Fujita et al., 2011 NUS07-4 -78.2167 32.8500 3595 1815-2007/8 19 ±0.5 1963-2007/8 17.5 ±1.2 -7.89% Ice core Anschutz et al., 2009 NUS07-5 -78.6500 35.6300 3619 1815-2007/8 24 ±0.5 1963-2007/8 20.1 ±1.4 -16.25% Ice core Anschutz et al., 2011	IC12	-70.2458	8 26.3349	9 450	1816-2012	480	± 10	1955-2012	630 ±	±20	1992-2012	680	±70	31.25%	42%	Ice core	This paper
NUS07-4 -78.2167 32.8500 3595 1815-2007/8 19 ±0.5 1963-2007/8 17.5 ±1.2 -7.89% Ice core Anschutz et al., 2009 NUS07-5 -78.6500 35.6300 3619 1815-2007/8 24 ±0.5 1963-2007/8 20.1 ±1.4 -16.25% Ice core Anschutz et al., 2011	DK190	-76.7940	0 31.9000	3741	1286-2008	28.7	± 0.9				1993-2008	34.1	±2.3		19%	Firn core and radar	Fujita et al., 2011
NUS07-5 -78.6500 35.6300 3619 1815-2007/8 24 ±0.5 1963-2007/8 20.1 ±1.4 -16.25% Ice core Anschutz et al., 2011	NUS07-4	-78.216	7 32.8500	3595	1815-2007/8	19	±0.5	1963-2007/8	17.5 ±	±1.2				-7.89%		Ice core	Anschutz et al., 2009
	NUS07-5	-78.6500	35.6300	3619	1815-2007/8	24	±0.5	1963-2007/8	20.1 ±	±1.4				-16.25%		Ice core	Anschutz et al., 2011

Site name	Latitude I	Longitude	Elevation	Reference	SMB (1	10^{-3} m	Recent period	SMB (10) ⁻³ m	Most recent	SMB (10 ⁻³ m w.e.)		% change	% change	Method	Study
			(m a.s.l.)	period	w.e.) (k	$(g m^{-2} a^{-1})$		w.e.) (kg	$m^{-2}a^{-1}$)	period	(kg m^{-2})	a ⁻¹)	(50a - ref)	(20a - ref)		
						,					ν υ	,		except**		
DF	-77.3170	39.7030) 3810	1816-2001	26.3		1964-2008	28.8	±0.7	1995-2006	27.3	±0.4	9.51%	4%	Ice core	Igarashi et al., 2011
YM85	-71.5800	40.6300) 2246	1816-2002	140		1965-2002	135					-3.57%		Ice core	Takahashi et al., 2009
H72	-69.2047	41.0906	5 1214	1831-1998	311		1973-1998	307					-1.29%		Ice core and poles	Nishio et al., 2002
NUS07-6	-80.7833	44.8500) 3672	1815-2007/8	22		1902-2007/8	21					-4.55%		Ice core	Anschutz et al., 2009
G15	-71.2000	45.9800) 2544	1816-1964	86		1964-1984	116					34.88%		Ice core	Moore et al., 1991
NUS07-8	-84.1833	53.5333	3 3452	1815-2007/8	32	± 1.2	1963-2007/8	30	± 2.1				-6.25%		Ice core	Anschutz et al., 2009
NUS07-7	-82.0700	54.5500) 3725	1815-2007/8	29.4	±0.6	1963-2007/8	26.1	±1.9				-11.22%		Ice core	Anschutz et al., 2011
DT217	-75.7167	76.8333	3 2800	**			1998-2008	12	± 1.72	2005-2008	12			0%	Stake arrays	Ding et al., 2011
DT364	-78.3333	77.0000) 3380	**			1999-2008	62	±0.14	2005-2008	72			16%	Stake arrays	Ding et al., 2011
DT401	-79.0200	77.0000) 3760	1816-1999	19		1963-1999	24		1999–2005	25	±16	26.32%	32%	Ice core	Ren et al., 2010; Ding et al.,
DT001	-70.8300	77.0700) 2325	1810-1959	131		1959-1996	131					0.00%		Ice core	Zhang et al., 2006
Dome A	-80.3667	77.3500) 4093	**			2005-2008	19	±0.25	2008-2009	21			11%	Stake arrays	Ding et al., 2011
DomeA	-80.3600	77.3600) 4092	1815-1998	23		1963-1998	23					0.00%		Ice core	Jiang et al., 2012
LGB65	-71.8500	77.9200) 1850	1815-1996	131		1960-1996	131					0.00%		Ice core	Xiao et al., 2004
DT008	-72.1667	77.9333	3 2390	**			1998-2008	118	±0.30	2005-2008	80			-32%	Stake arrays	Ding et al., 2011
VOSTOK	-78.4500	106.8300) 3488	1816-2010	20.6	±0.3	1955-2010	21.5	±0.5	1958-2010	20.8		4.37%	1%	Snow pits and poles	Ekaykin et al., 2004
DSS	-66.7697	112.8069	0 1370	1816-2000	680		1970-2009	750					10.29%		Ice core	Roberts et al., 2015
LAW DOME	-66.7700	112.9800) 1370	1816-1966	687		1966-2005	742					8.01%		Ice core	Morgan et al., 1991; van Ommen
																& Morgan, 2010
DomeC	-75.1200	123.3100) 3233	1816-1998	25.3		1965-1998	28.3		1996-1998	39		11.86%	54%	Ice core and poles	Frezzotti et al., 2005
D6 A	-75.4400	129.8100) 3027	1816-1998	36	± 1.8	1966-1998	29	±1.4	1998-2002	39		-19.44%	8%	Ice core and poles	Frezzotti et al., 2005
D66	-68.9400	136.9400) 2333	1966-1864	196		1965-2001	213	±13	2001-2003	197		8.67%	1%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2013
D2 A	-75.6200	140.6300) 2479	1816-1998	20	± 1.0	1966-1998	31	±1.6	1998-2002	30		55.00%	50%	Ice core and poles	Frezzotti et al., 2005
GV1	-70.8700	141.3800) 2244	1816-2001	114		1965-2001	117	±7	2001-2003	96		2.63%	-16%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2013
GV2	-71.7100	145.2600) 2143	1816-2001	112		1965-2001	112	±7	2001-2003	92		0.00%	-18%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2013
MdPtA	-75.5300	145.8600) 2454	1816-1998	36	± 1.8	1966-1998	45	±2.7	1998-2010	47		25.00%	31%	Ice core and poles	Frezzotti et al., 2005
GV3	-72.6300	150.1700) 2137	1816-2001	81		1965-2001	84	±5	2001-2003	73		3.70%	-10%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2013
M2 A	-74.8000	151.2700) 2278	1816-1998	17	± 0.8	1966-1998	15	±7.5	1998-2002	8.5		-11.76%	-50%	Ice core and poles	Frezzotti et al., 2005
GV4	-72.3900	154.4800) 2126	1816-2001	119		1965-2001	100	±6	2001-2003	96		-15.97%	-19%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2013
31DPT A	-74.0300	155.9600) 2069	1816-1998	98	±4.9	1966-1998	112	±5.6	1998-2002	98		14.29%	0%	Ice core and poles	Frezzotti et al., 2005
GPS2A	-74.6400	157.5020) 1804	1816-1998	60	±3.0	1966-1998	54	±2.7	1993-2000	55		-10.00%	-8%	Ice core and poles	Frezzotti et al., 2005
GV5	-71.8900	158.5400) 2184	1816-2001	129		1965-2001	129	±7	2001-2004	135		0.00%	5%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2007
GV7	-70.6800	158.8600) 1947	1854-2001	237		1965-2001	241	±13	2001-2004	252		1.69%	6%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2007
Talos Dome	-72.7700	159.0800) 2316	1816-2001	83.6		1966-1996	86.6		2001-2010	68		3.59%	-19%	Ice core and poles	Magand et al., 2004;Frezzotti et
																al., 2007; 2013
Hercules Neve	-73.1000	165.4000) 2960	1816-1966	118		1966-1992	129					9.32%		Ice core	Stenni et al., 1999

References for Table S1

- Anschütz, H., Müller 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, doi: 10.1029/2009JD012204, 2009.
- Ekaykin, A. A., Lipenkov, V. Y., Kuzmina, I., Petit, J. R., Masson-Delmotte, V., and Johnsen, S. J.: The changes in isotope composition and accumulation of snow at Vostok station, East Antarctica, over the past 200 years, Ann. Glaciol., 39, 569–575, doi: 10.3189/172756404781814348, 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, doi: 10.1029/2006JF000638, 2007.
- Igarashi, M., Nakai, Y., Motizuki, Y., Takahashi, K., Motoyama, H., and Makishima, K.: Dating of the Dome Fuji shallow ice core based on a record of volcanic eruptions from AD 1260 to AD 2001, Polar Sci., 5, 411–420, doi: 10.1016/j.polar.2011.08.001, 2011.
- Magand, O., Frezzotti, M., Pourchet, M., Stenni, B., Genoni, L., and Fily, M.: Climate variability along latitudinal and longitudinal transects in east Antarctica, Ann. Glaciol., 39, 351–358, doi: 10.3189/172756404781813961, 2004.
- Morgan, V. I., Goodwin, I. D., Etheridge, D. M., and Wookey, C. W.: Evidence from Antarctic ice cores for recent increases in snow accumulation, Nature, 354(6348), 58–60, doi: 10.1038/354058a0, 1991.
- Mulvaney, R., Oerter, H., Peel, D. A., Graf, W., Arrowsmith, C., Pasteur, E. C., Knight, B., Littot, G. C., and Miners, W. D: 1000-year ice core records from Berkner Island, Antarctic, Ann. Glaciol., 35, 45–51, doi: 10.3189/172756402781817176, 2002.
- Raymond, C., Weertman, B., Thompson, L., Mosley-Thompson, E., Peel, D., and Mulvaney, R.: Geometry, motion and mass balance of Dyer Plateau, Antarctica, J. Glaciol., 42, 510–518, doi: 10.3198/1996JoG42-142-510-518, 1996.
- 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, doi: 10.5194/cp-11-697-2015, 2015.
- Ruth, U., Wagenbach, D., Mulvaney, R., Oerter, H., Graf, W., Pulz, H., and Littot, G.: Comprehensive 1000 year climate history from an intermediate depth ice core from the south dome of Berkner Island, Antarctica: methods, dating and first results, Ann. Glaciol., 39, 146–154, doi: 10.3189/172756404781814104, 2004.
- Schlosser, E., Anschütz, H., Divine, D., Martma, T., Sinisalo, A., Altnau, S., and Isaksson, E.: Recent climate tendencies on an East Antarctic ice shelf inferred from a shallow firn core network, J. Geophys. Res., 119, 6549–6562, doi: 10.1002/2013jd020818, 2014.
- Sommer, S., Appenzeller, C., Röthlisberger, R., Hutterli, M. A., Stauffer, B., Wagenbach, D., Oerter, H., Wilhelms, F., Miller, H., and Mulvaney, R.: Glacio-chemical study spanning the past 2 kyr on three ice cores from Dronning Maud Land, Antarctica, 1. Annually resolved accumulation rates, J. Geophys. Res., 105, 29411–29421, doi: 10.1029/2000jd900449, 2000.
- Stenni, B., Caprioli, R., Cimmino, L., Cremisini, C., Flora, O., Gragnani, R., Longinelli, A., Maggi, V., and Torcini, S.: 200 years of isotope and chemical records in a firn core from Hercules Neve, northern Victoria Land, Antarctica, Ann. Glaciol., 29, 106–112, doi: 10.3189/172756499781821175, 1999.
- Takahashi, H., Yokoyama, T., Igarashi, M., Motoyama, H., and Suzuki, K.: Resolution of environmental variation by detail analysis of YM85 shallow ice core in Antarctica, Bull. Glaciol. Res., 27, 16–23, 2009.
- van Ommen, T. D., and Morgan, V.: Snowfall increase in coastal East Antarctica linked with southwest Western Australian drought, Nat. Geosci., 3, 267–272, doi: 10.1038/ngeo761, 2010.
- Xiao, C., Mayewski, P. A., Qin, D., Li, Z., Zhang, M., and Yan, Y.: Sea level pressure variability over the southern Indian Ocean inferred from a glaciochemical record in Princess Elizabeth Land, east Antarctica, J. Geophys. Res., 109, D16101, doi: 10.1029/2003JD004065, 2004.