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Supplement of

Regional Antarctic snow accumulation over the past 1000 years

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Site Name	Publication Reference	Data citation
1. East Antarctic Plateau		
Vostok composite VRS13	Ekaykin et al., 2014	Alexey Ekaykin. Annual snow accumulation composite, Vostok, East Antarctica. Antarctica 2k database. Presented in Ekaykin et al., 2014.
B31Site DML07	Sommer et al., 2000; Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, DML, East Antarctica. doi:10.1594/PANGAEA.64400. 2000
B32Site DML05	Sommer et al., 2000; Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, DML, East Antarctica. doi:10.1594/PANGAEA.64399. 2000
B33Site DML17	Sommer et al., 2000; Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, DML, East Antarctica. doi:10.1594/PANGAEA.64401. 2000
FB96DML01	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML02	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML03	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML04	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML05	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML06	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML07	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML08	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML09	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB96DML10	Oerter et al., 1999	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 1999
FB9803	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.58404. 2000
FB9804	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.728162. 2000
FB9805	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64162. 2000
FB9807	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64155. 2000
FB9808	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.407657. 2000
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FB9810	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64164. 2000
FB9811	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64165. 2000
FB9812	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64166. 2000
FB9813	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64160. 2000
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FB9815	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64158. 2000

FB9816	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.64157. 2000
FB9817	Oerter et al., 2000	Hans Oerter. Annual snow accumulation data, Fimblisen, East Antarctica. doi:10.1594/PANGAEA.6156. 2000
South Pole 1995	Mosely-Thomposn et al., 1999	Ellen Mosely-Thomposon. Annual snow accumulation data, South Pole, Antarctica. http://nsidc.org/data/nsidc-0273.html . 1999
GV2	Frezzotti et al., 2013	Massimo Frezzotti. Annual snow accumulation data, East Antarctica. https://www.ncdc.noaa.gov/paleo/study/22711
D66	Frezzotti et al., 2013	Massimo Frezzotti. Annual snow accumulation data, East Antarctica. https://www.ncdc.noaa.gov/paleo/study/22711
LGB65	Xiao et al., 2004	Massimo Frezzotti. Annual snow accumulation data, East Antarctica. Antarctica 2k database. Published in Frezzotti et al., 2013. 2013
US-ITASE-2002-7	Mayewski and Dixon, 2013	Daniel Dixon. Annual snow accumulation data, East Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2002-4	Mayewski and Dixon, 2013	Daniel Dixon. Annual snow accumulation data, East Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013

2. Wilkes Land Coast

DSS Law Dome	Roberts et al., 2015	Mark Curran/ Jason Roberts. Annual snow accumulation data, Law Dome, East Antarctica. Antarctica 2k database. Presented in Roberts et al., 2015. 2016
105th km	Vladimirova et al., 2014	Diana Vladimirova. Annual snow accumulation data, East Antarctica. Antarctica 2k database. Presented in Vladimirova et al., 2014.
200th km	Ekaykin et al., 2017	Diana Vladimirova/ Alexey Ekaykin. Annual snow accumulation data, East Antarctica. Antarctica 2k database. Presented in Ekaykin et al., 2017. 2017

3. Weddell Sea Coast

Berkner Island (South)	Mulvaney et al., 2002	Robert Mulvaney. Annual snow accumulation data, Berkner Island, Antarctica. doi:10.1594/PANGAEA.728157. 2002
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4. Antarctic Peninsula

Gomez	Thomas et al., 2008	Elizabeth Thomas. Annual snow accumulation data, Antarctic Peninsula. https://www.ncdc.noaa.gov/paleo/study/12543 .
James Ross Island	Aristarain et al., 2004	Alberto Aristarain. Annual snow accumulation data, Antarctic Peninsula. Antarctica 2k database. Presented in Aristarain et al., 2004;
Dyer Plateau	Thompson et al., 2004	Robert Mulvaney. Annual snow accumulation data, Antarctic Peninsula. Antarctica 2k database. Presented in Thompson et al., 2004. 2016
Bruce Plateau	Goodwin et al., 2016	Ellen Mosely-Thompson. Annual snow accumulation data, Antarctic Peninsula. https://www.ncdc.noaa.gov/paleo/study/20350 .
Beethoven	Pasteur and Mulvaney, 2000	Robert Mulvaney. Annual snow accumulation data, Antarctic Peninsula. Antarctica 2k database. Presented in Pasteur and Mulvaney, 2000. 2016
Ferrigno	Thomas et al., 2015	Elizabeth Thomas. Polar Data Centre, Natural Environment Research Council, UK. https://doi.org/10.5285/9ab1541b-e71a-4d75-9907-968d47755e99
Bryan Coast	Thomas et al., 2015	Elizabeth Thomas. Polar Data Centre, Natural Environment Research Council, UK. https://doi.org/10.5285/6feac38a-5847-46f9-84e4-e7e9d291f935

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DIV2010	Medley et al., 2013	Brooke Medley. Annual snow accumulation data, West Antarctica. NASA, 2016 https://neptune.gsfc.nasa.gov/csb/index.php?section=267 .
THW2010	Medley et al., 2013	Brooke Medley. Annual snow accumulation data, West Antarctica. NASA, 2016 https://neptune.gsfc.nasa.gov/csb/index.php?section=267 .
PIG2010	Medley et al., 2013	Brooke Medley. Annual snow accumulation data, West Antarctica. NASA, 2016 https://neptune.gsfc.nasa.gov/csb/index.php?section=267 .
WDC05A	Banta et al., 2008	R Banta. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0493.html . 2008
WD05Q	Banta et al., 2008	R Banta. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0493.html . 2008
WAIS 2014	Fudge et al., 2016	TJ Fudge. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0591.html . 2016
CWA-A	Reusch et al., 1997	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
CWA-D	Reusch et al., 1997	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
Siple dome-94	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
Upstream-C (UP-C)	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
Ross ice drainage system A	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
Ross ice drainage system B	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
Ross ice drainage system C	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-1999-1	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2000-1	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2000-3	Mayewski et al., 2013	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2000-4	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2000-5	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
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US-ITASE-2001-2	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2001-3	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2001-4	Mayewski et al., 2013	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013
US-ITASE-2001-5	Kaspari et al., 2004	Daniel Dixon. Annual snow accumulation data, West Antarctica. http://nsidc.org/data/nsidc-0273.html . 2013

6. Victoria Land

Hercules Névé	Stenni et al., 1999	Barbarra Stenni. Annual snow accumulation data, East Antarctica. https://www.ncdc.noaa.gov/paleo-search/study/22401 . Published in Stenni et al., 1999. 2016
TD96 Talos Dome	Stenni et al., 2002	Barbarra Stenni. Annual snow accumulation data, East Antarctica. https://www.ncdc.noaa.gov/paleo/study/22712
GV7	Frezzotti et al., 2007; 2013	Massimo Frezzotti. Annual snow accumulation data, East Antarctica. https://www.ncdc.noaa.gov/paleo/study/22710
GV5	Frezzotti et al., 2007; 2013	Massimo Frezzotti. Annual snow accumulation data, East Antarctica. https://www.ncdc.noaa.gov/paleo/study/22710

RICE	Winstrup et al., 2017	Nancy Bertler. Annual snow accumulation data, Rosovelt Island, West Antarctica. Antarctica 2k database. Published https://doi.org/10.5194/cp-2017-101 . 2017
7. Dronning Maud Land		
Fimbulisen S20	Isaksson et al., 1999	Dmitry Divine, Elisabeth Isaksson. Annual snow accumulation data, Fimbulisen, East Antarctica. Published in Isaksson et al., 1999
Fimbulisen S100	Kaczmarska et al., 2004	Dmitry Divine, Elisabeth Isaksson. Annual snow accumulation data, Fimbulisen, East Antarctica. Published in Kaczmarska et al., 2004
Georg-von-Neumayer (B04)	Schlosser et al., 1999	Elisabeth Schlosser. Annual snow accumulation data, Neumayer, East Antarctica. Published in Schlosser et al., 1999
Kottas Camp FB9802	Oerter et al., 2000	Dmitry Divine, Elisabeth Isaksson. Annual snow accumulation data, Fimbulisen, East Antarctica. Published in Oerter et al., 2000
H72	Nishio et al., 2002	Massimo Frezzotti. Annual snow accumulation data, Dronning Maud Land, East Antarctica. Antarctica 2k database. Published in Frezzotti et al., 2013. 2013
Derwael Ice Rise IC12	Philippe et al., 2016	Morgane Philippe. Annual snow accumulation data, Dronning Maud Land, East Antarctica. Antarctica 2k database. Published in Philippe et al., 2016. 2016

Supplementary Table 1. Ice core data used in this study with publication reference and data citation. Meta data and original snow accumulation data available in Thomas (2017) "Antarctic regional snow accumulation composites over the past 1000 years" Polar Data Centre, Natural Environment Research Council, UK. <https://doi.org/10.5285/c4ecfe25-12f2-453b-ad19-49a19e90ee32>

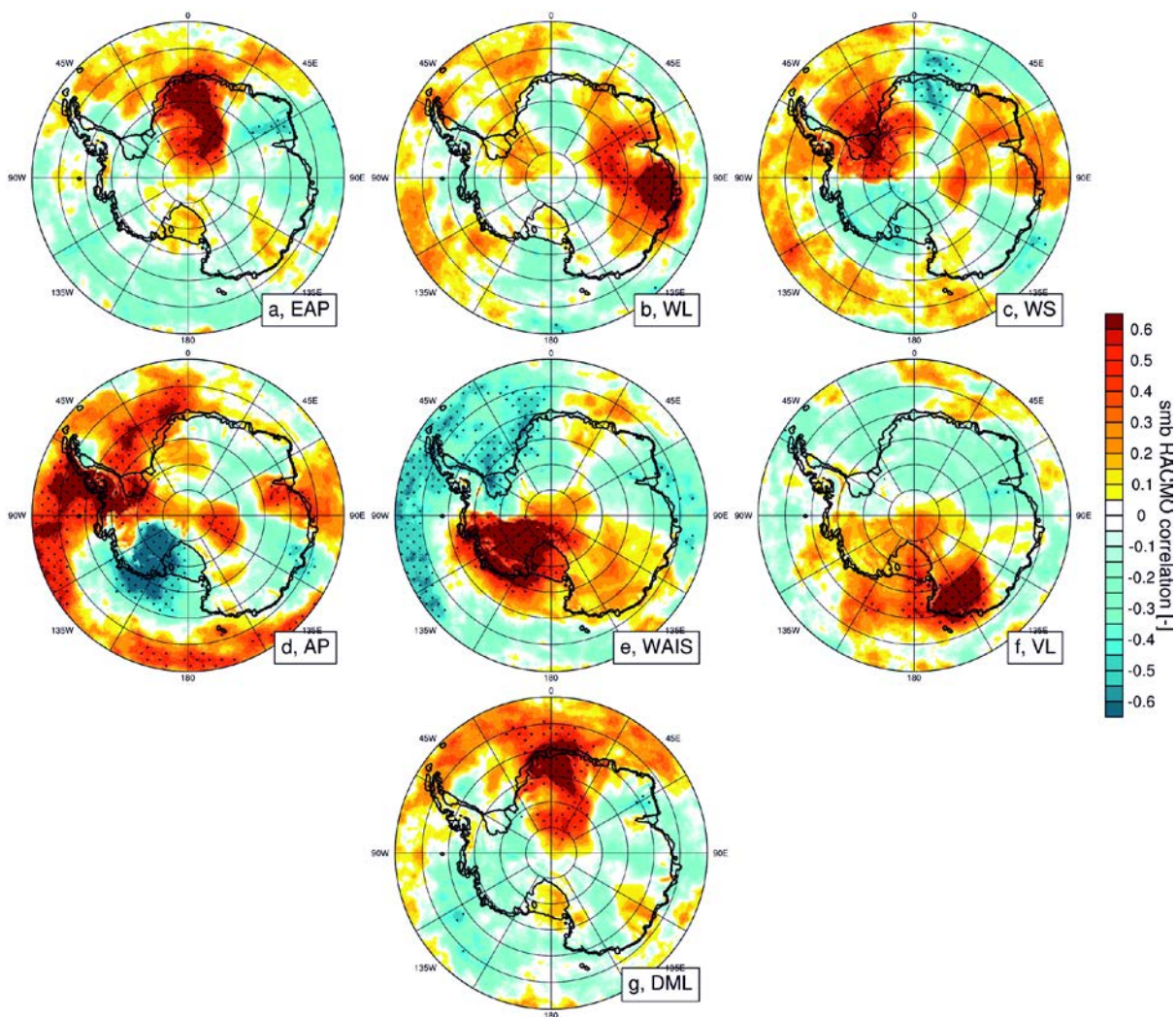


Figure S1: Spatial correlation plots of standardized “modelled” regional composites with SMB from RACMO 2.3p2 (1979-2010). Composites produced by extracting time series of SMB from RACMO 2.3p2 at each ice location and standardising and averaging using the same method as the ice core records. Grid points with >99 % significance are dotted.

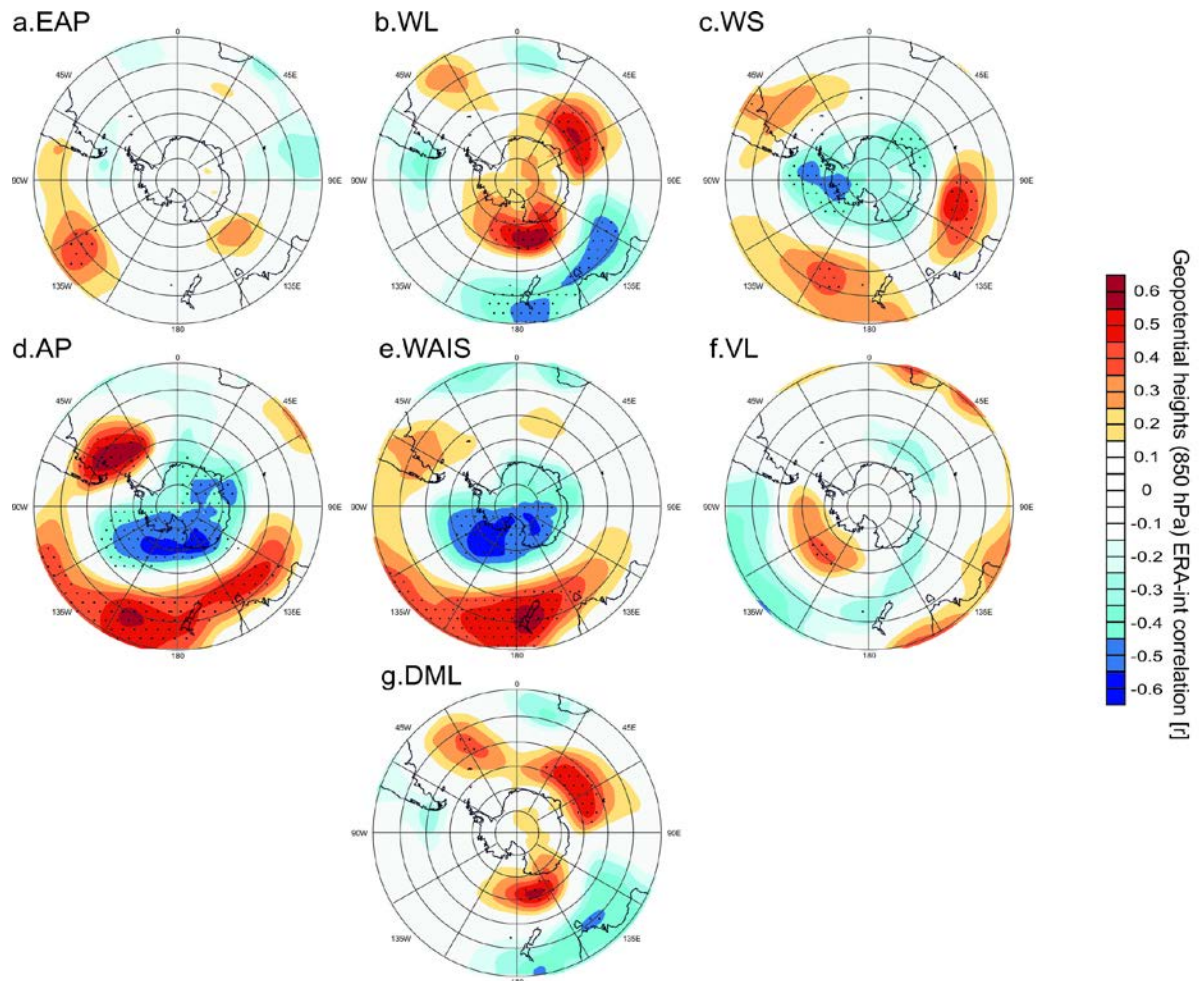


Figure S2: Spatial correlation plots of regional SMB from RACMO 2.3p2 with annual 850 hPa geopotential heights from ERA-interim (1979-2010). Grid points with >99 % significance are dotted.

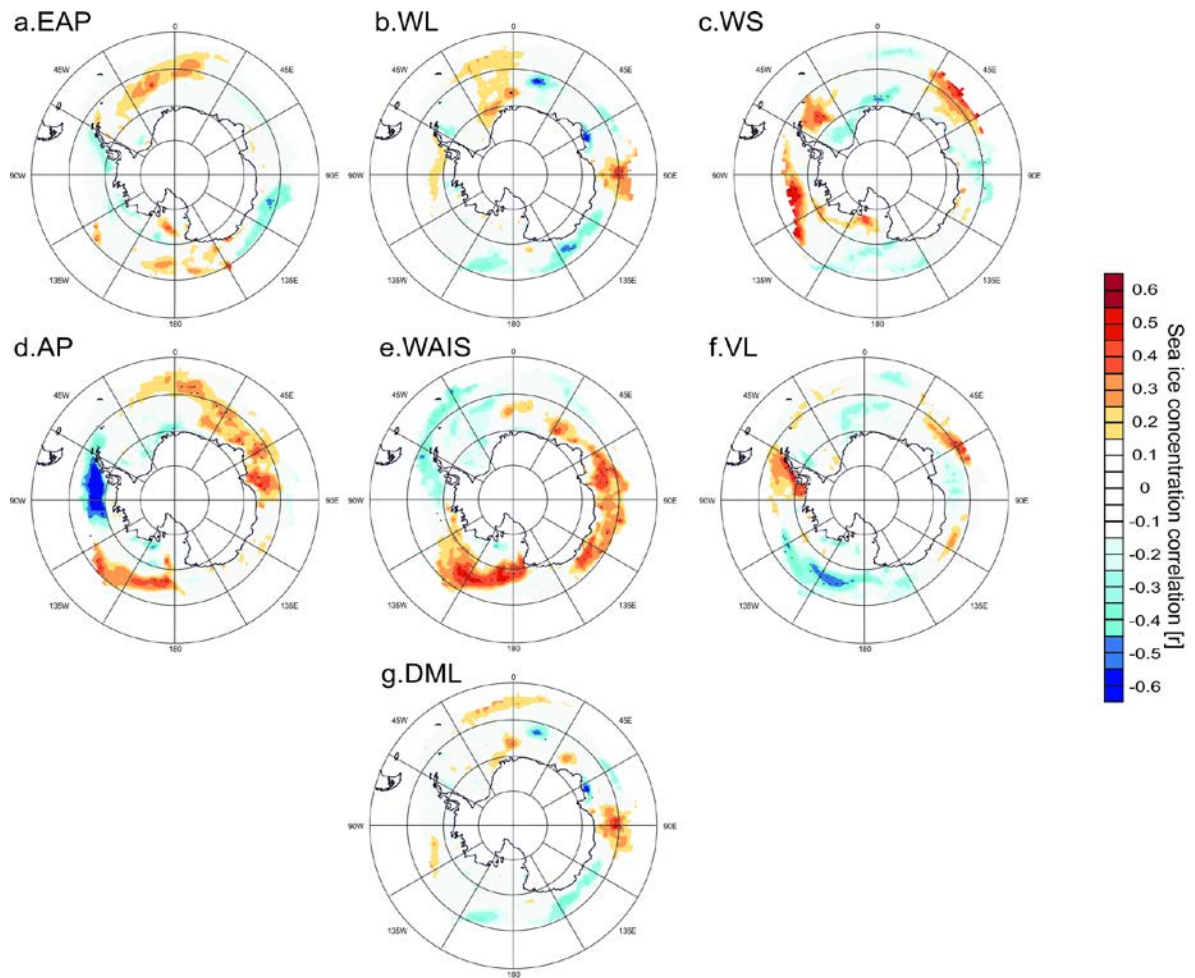


Figure S3: Spatial correlation plots of regional SMB from RACMO 2.3p2 with annual sea ice concentration from bootstrap analysis (1981-2010). Grid points with >99 % significance are dotted.