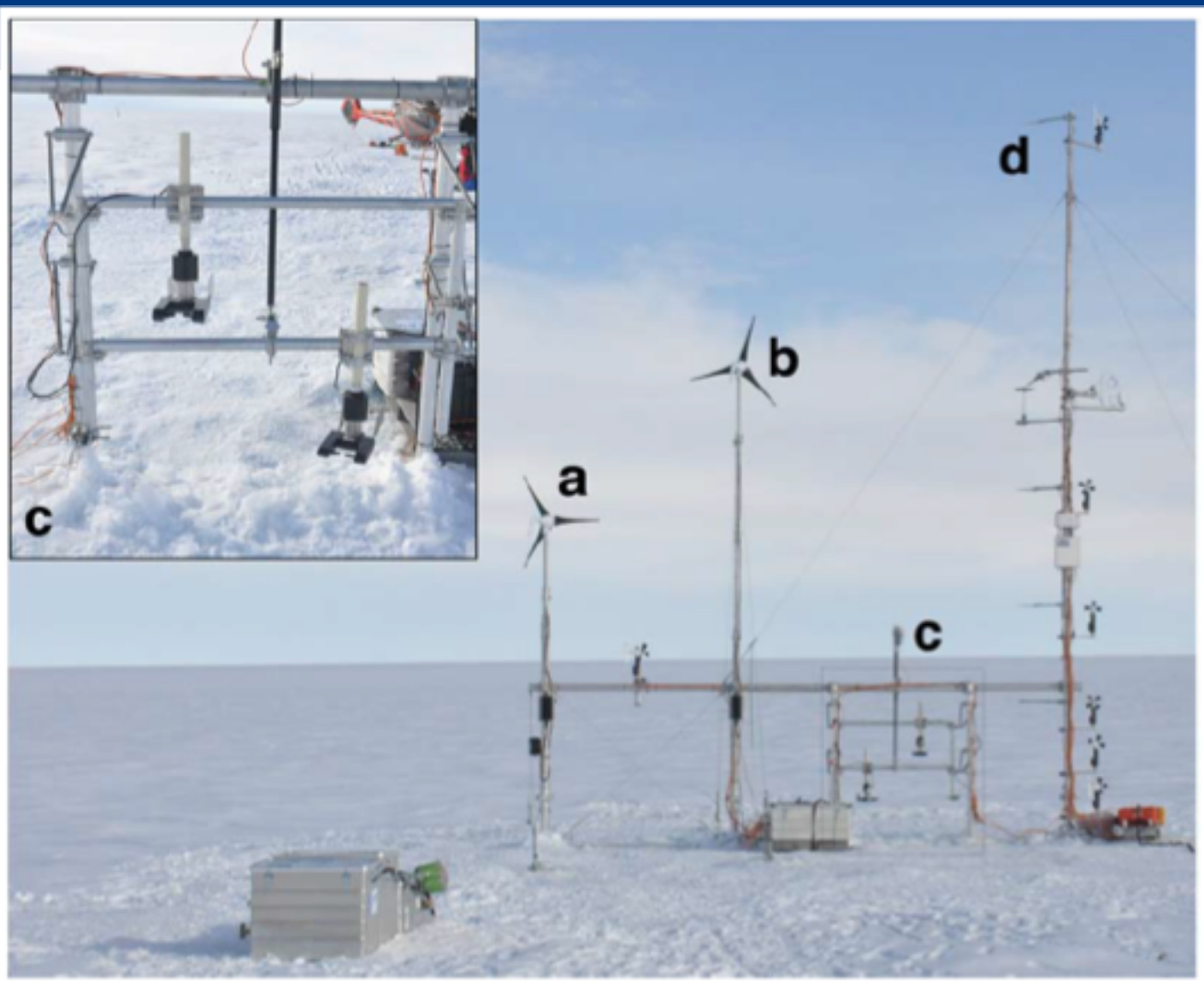
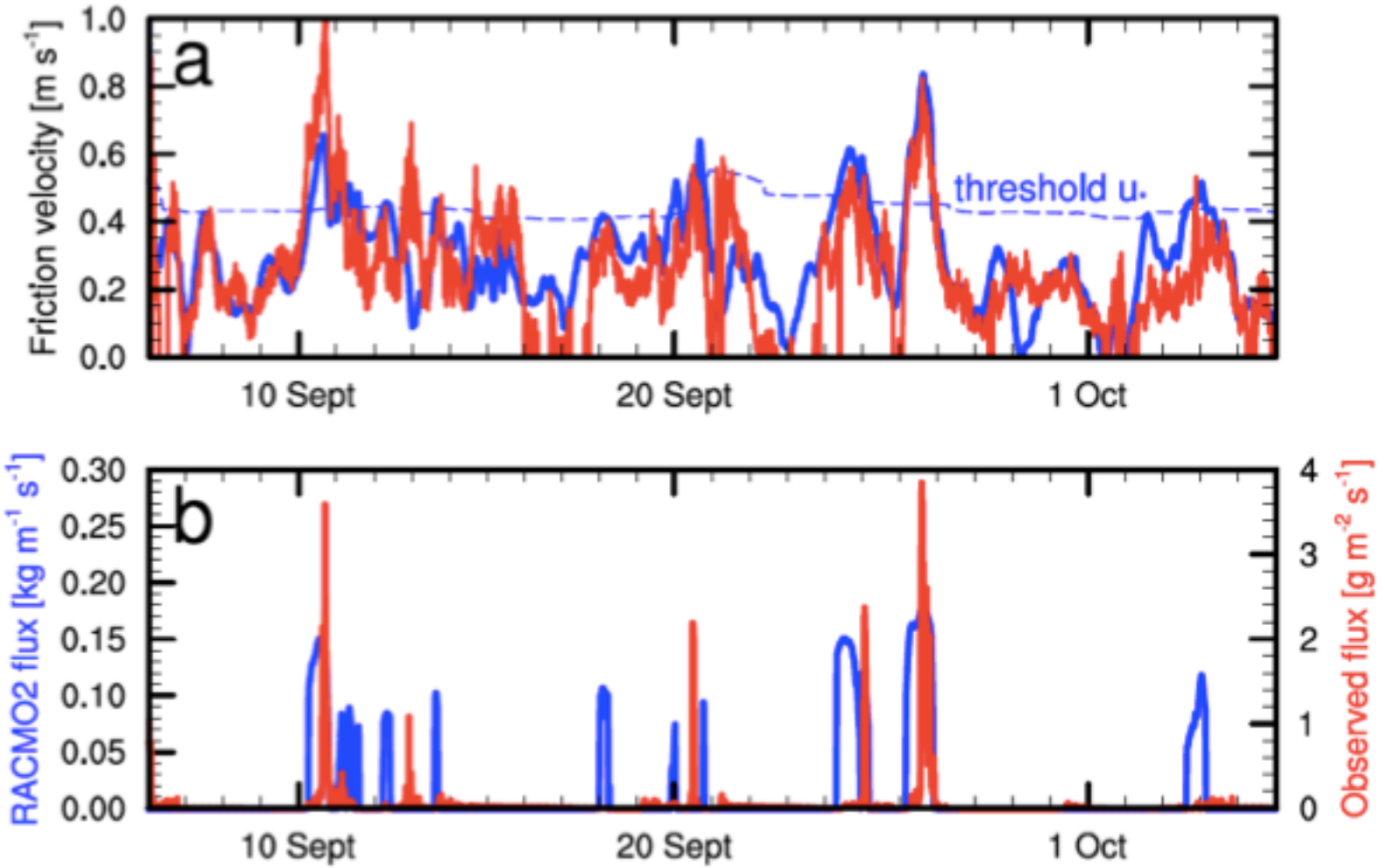
Snowdrift experiment S10, Greenland, fall 2012



Lenaerts and others, 2014

Comparison to RACMO2.3p1/PIEKTUK-B



Lenaerts and others, 2014

Improved drifting snow representation in RACMO2.3p2

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Modelling the climate and surface mass balance of polar ice sheets using RACMO2 – Part 2: Antarctica (1979–2016)

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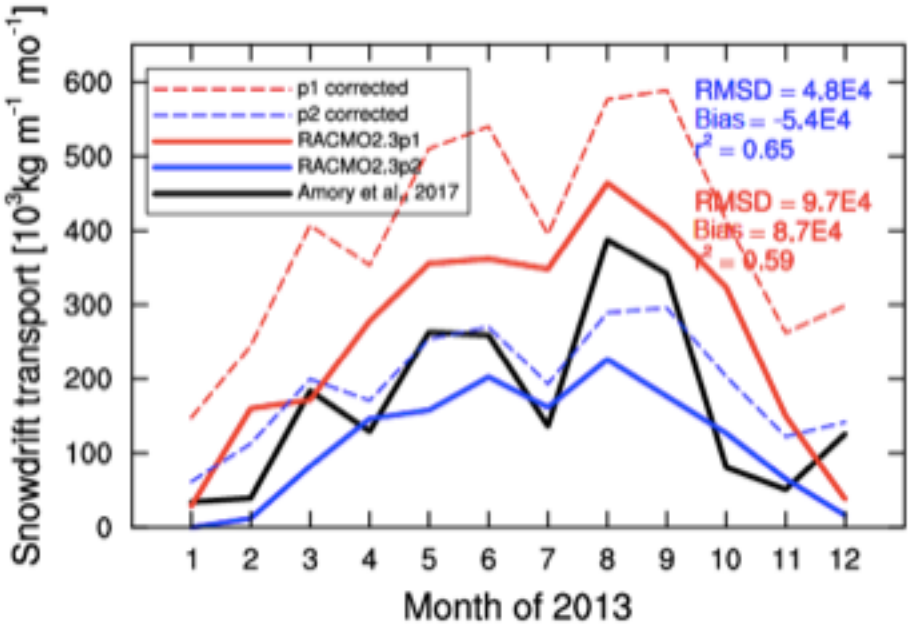
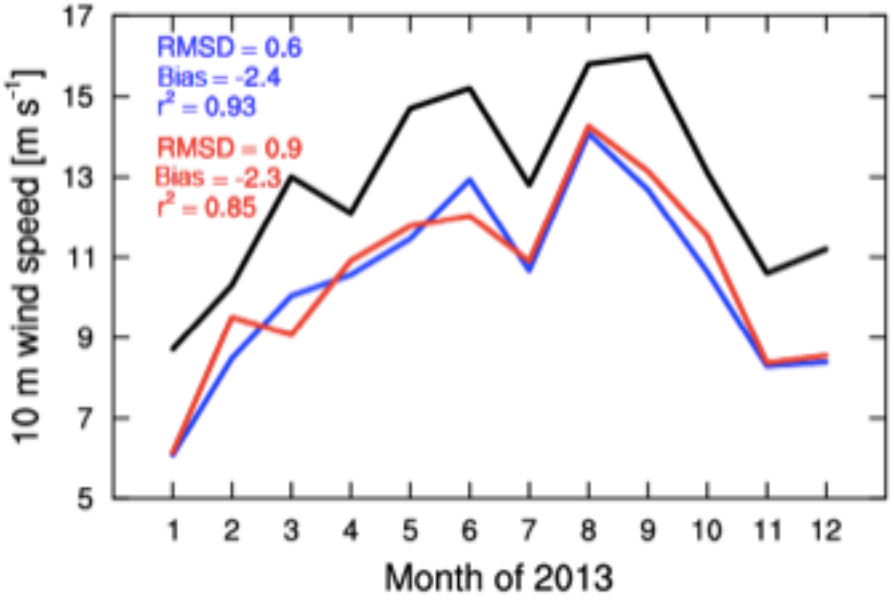
Van Wessem and others, 2018

Improved drifting snow representation in RACMO2.3p2





Van Wessem and others, 2018

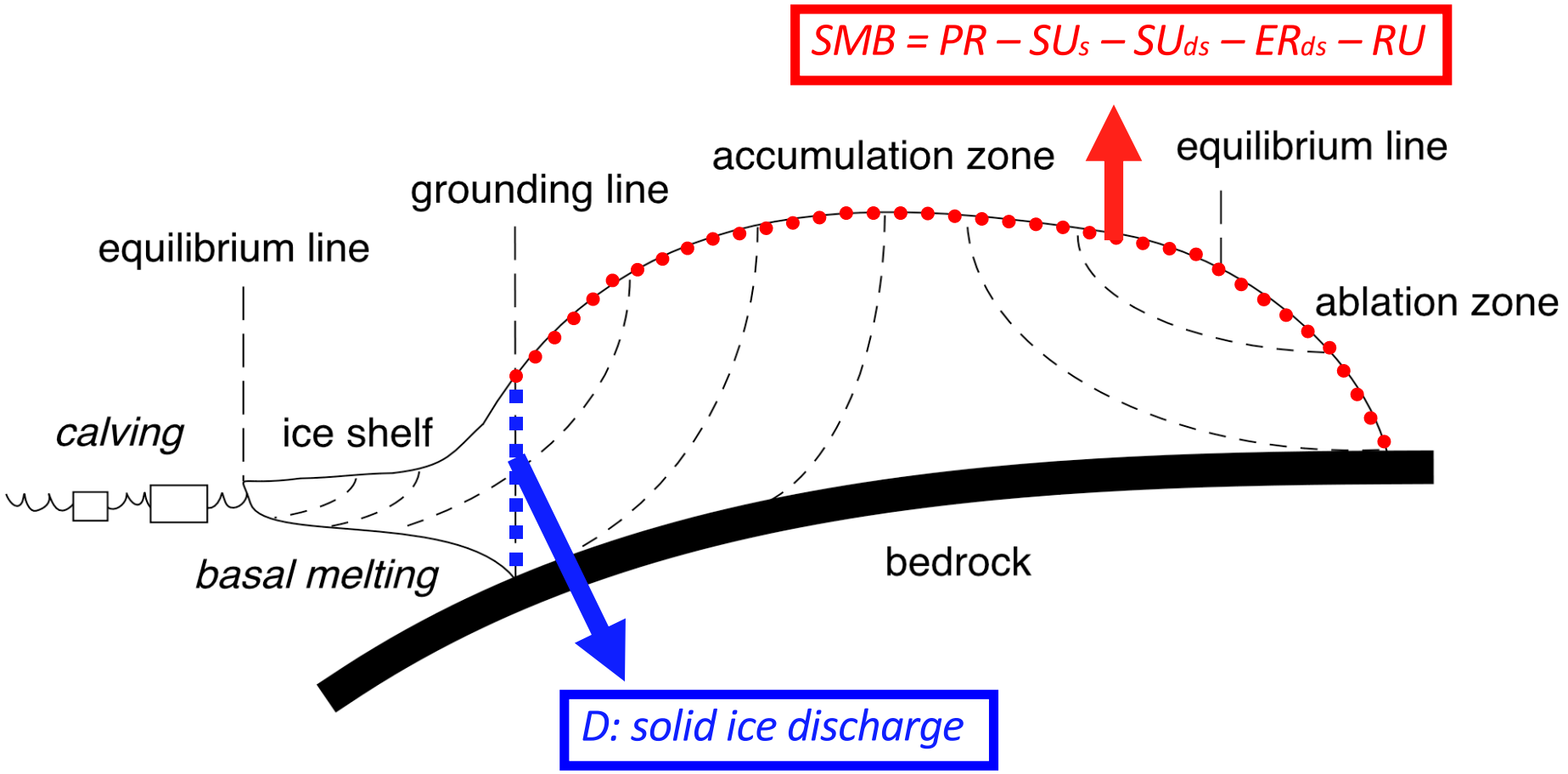
Improved drifting snow representation in RACMO2.3p2

	RACMO2.3p2		RACMO2.3p1		p2–p1
	mean	σ	mean	σ	mean
P_{tot}	2396	110	2386	118	+10 (0.5 %)
SN	2394	110	2383	109	+11 (0.5 %)
RA	3	1	2	1	1 (50 %)
SU_{tot}	161	7	217	11	−56 (25 %)
SU_s	59	4	37	3	+22 (60 %)
SU_{ds}	102	5	181	9	−79 (43 %)
ER_{ds}	5	0.5	5	0.5	0
RU	3	1	3	1	0
M	71	28	36	17	+35 (97 %)
RF	71	28	36	17	+35 (97 %)
SMB (TotIS)	2229	109	2160	118	+69 (3.2 %)
SMB (GIS)	1885	95	1782	103	+103 (5.8 %)
SMB (EAIS)	1130	80	1051	94	+79 (7.5 %)
SMB (WAIS)	644	63	627	60	+17 (2.7 %)
SMB (ISLANDS)	110	11	–	–	–

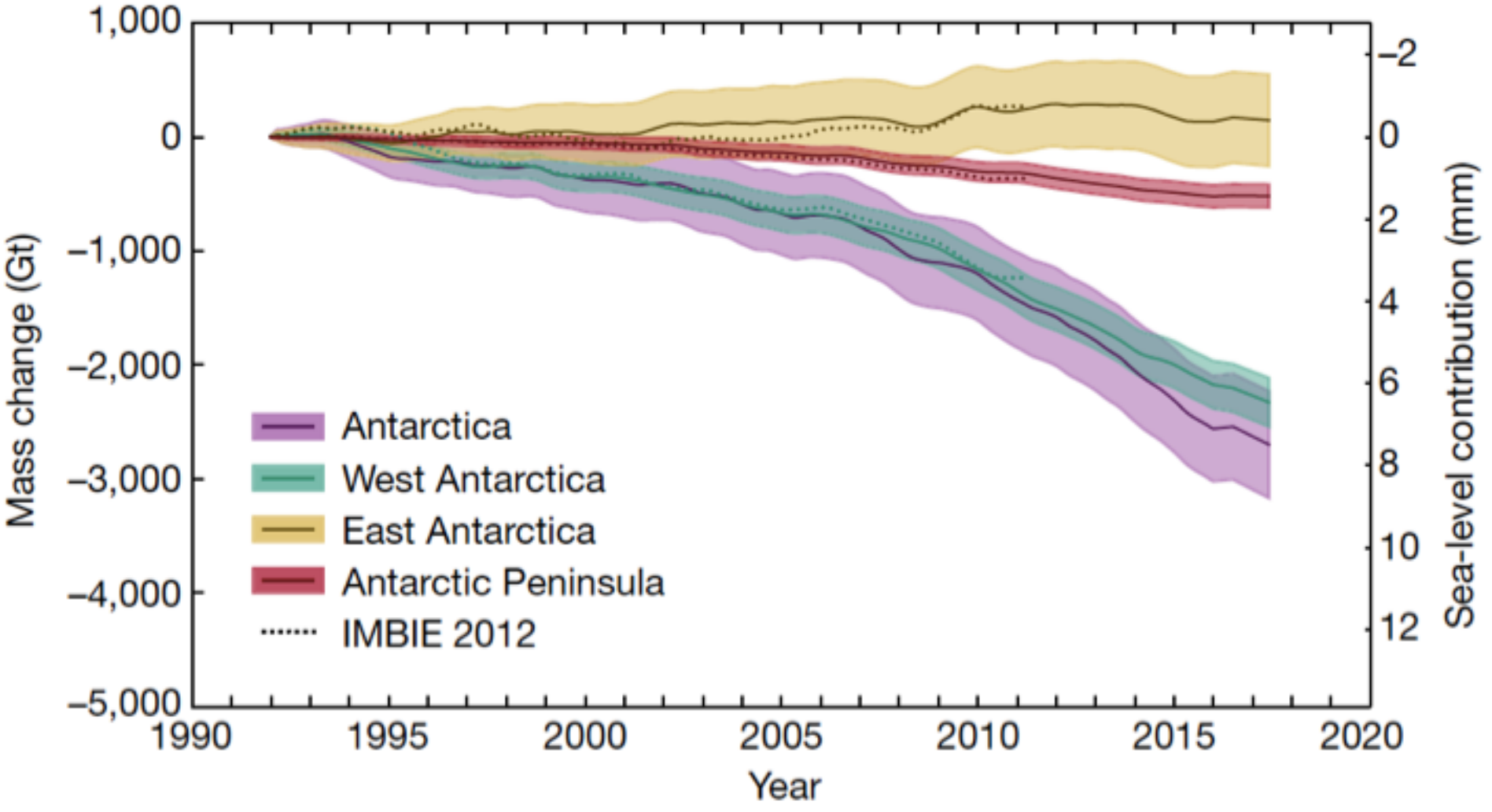
Van Wessem and others, 2018

Mass Balance = Surface Mass Balance – Discharge

(MB = SMB – D)



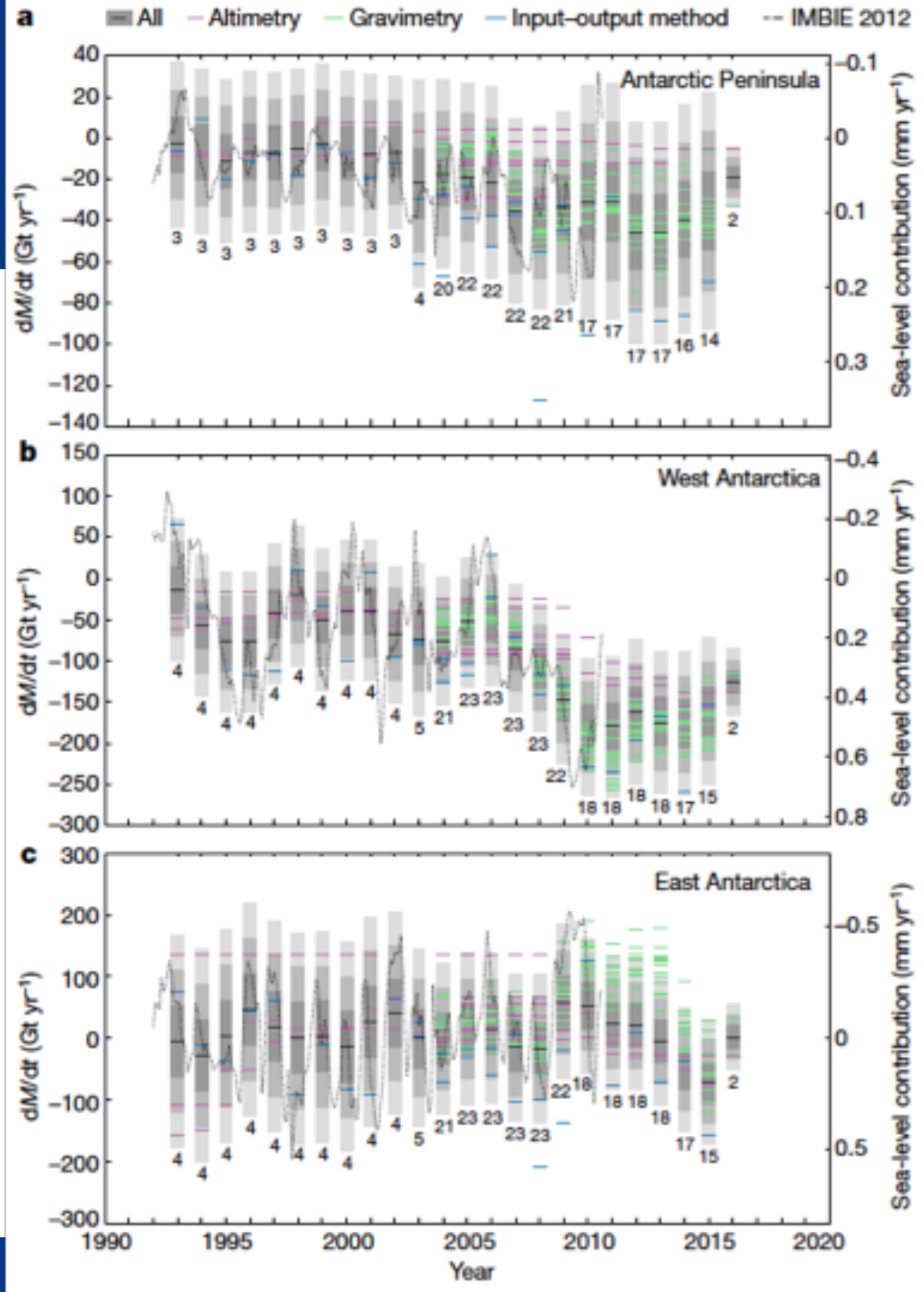
Mass loss from Antarctica has tripled in last decade



IMBIE team, 2018

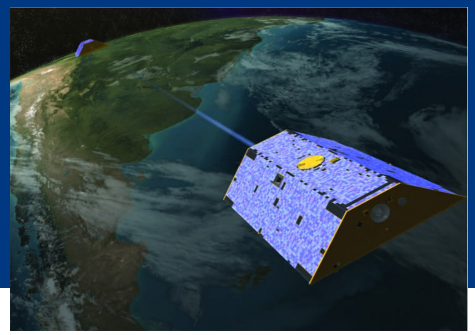
Mass loss from Antarctica has tripled in last decade

- Satellite altimetry: direct volume changes
- Satellite gravimetry: direct mass changes
- Input-output method: differ SMD and D

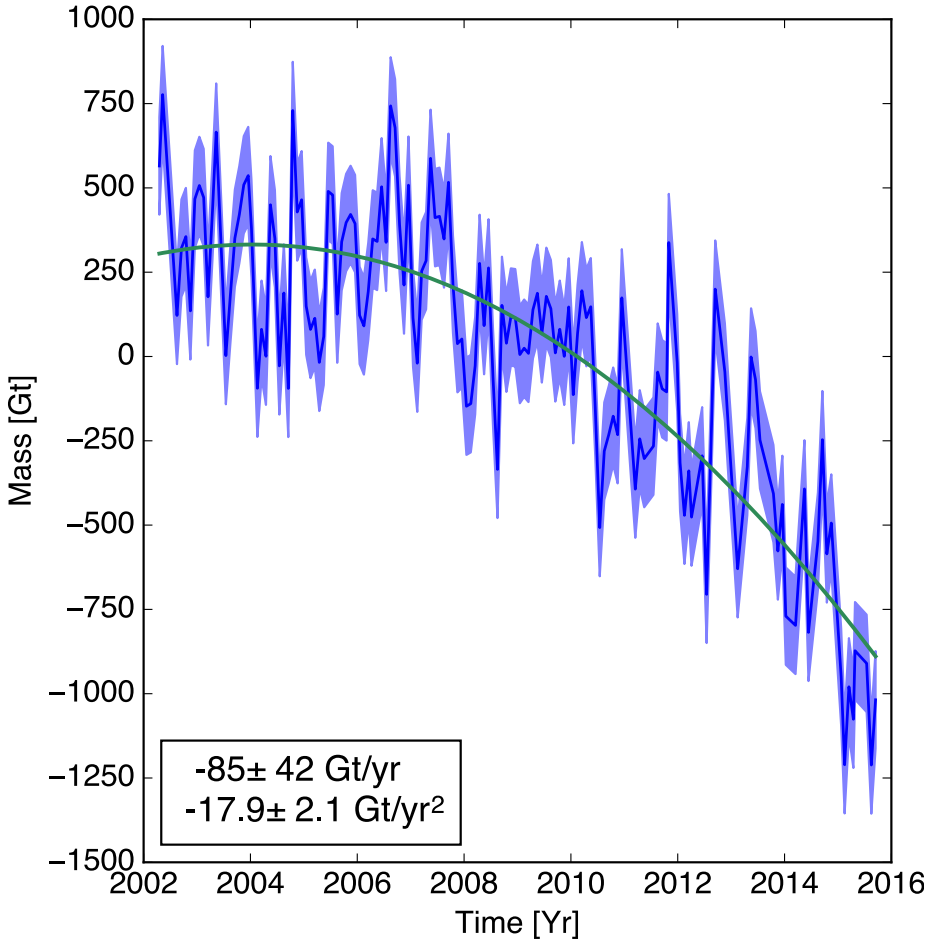


IMBIE team, 2018

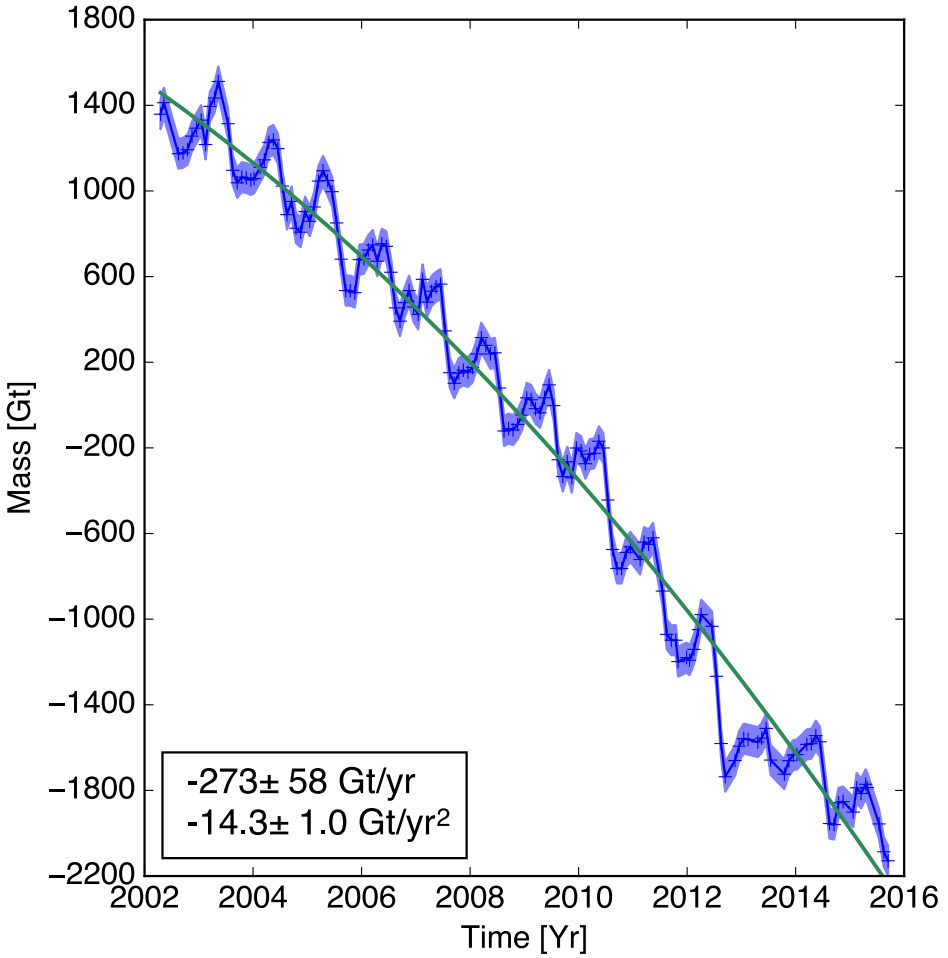
13 years of ice sheet mass changes from GRACE



Antarctic ice sheet

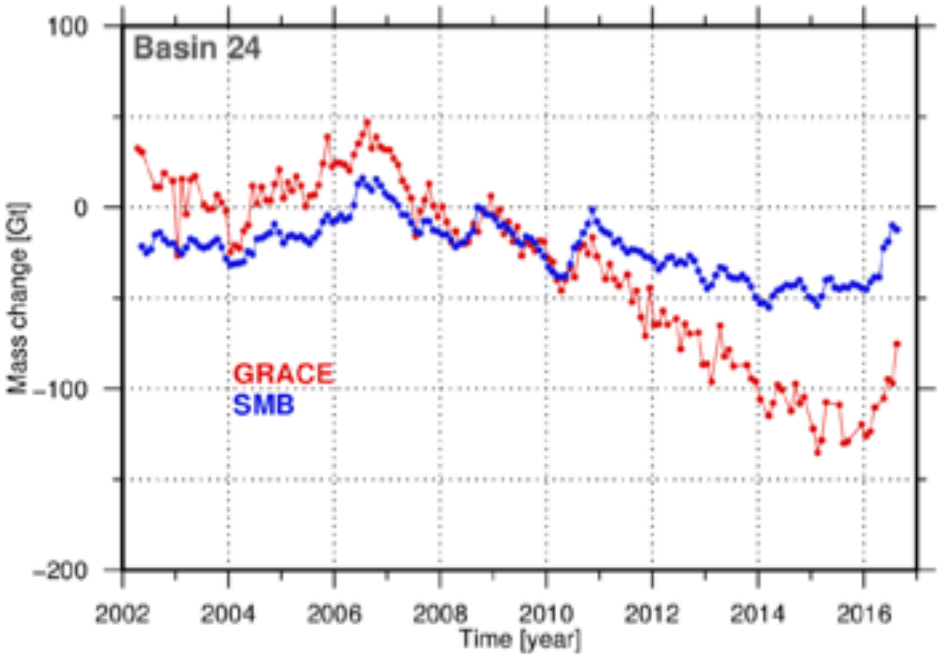


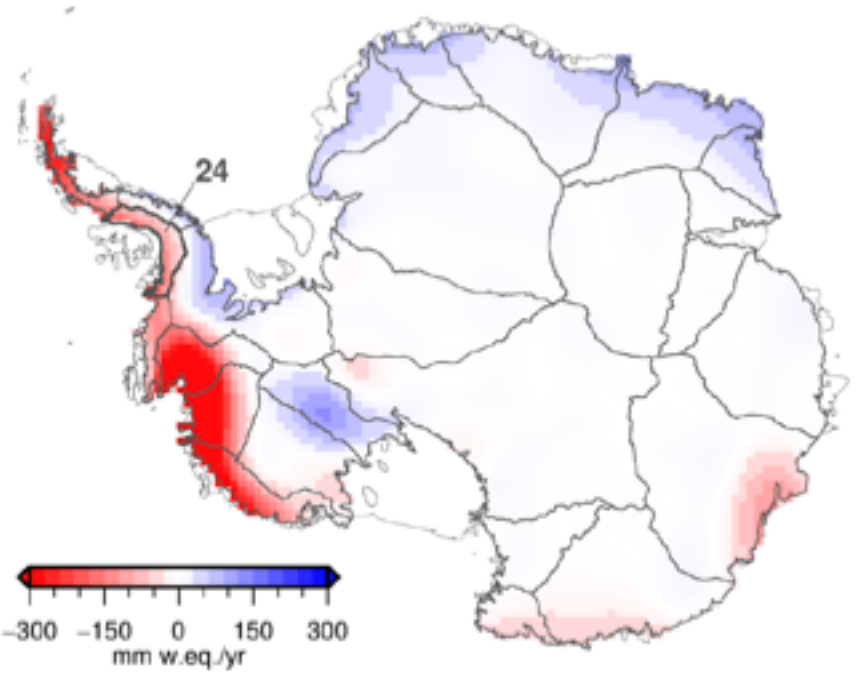
Greenland ice sheet



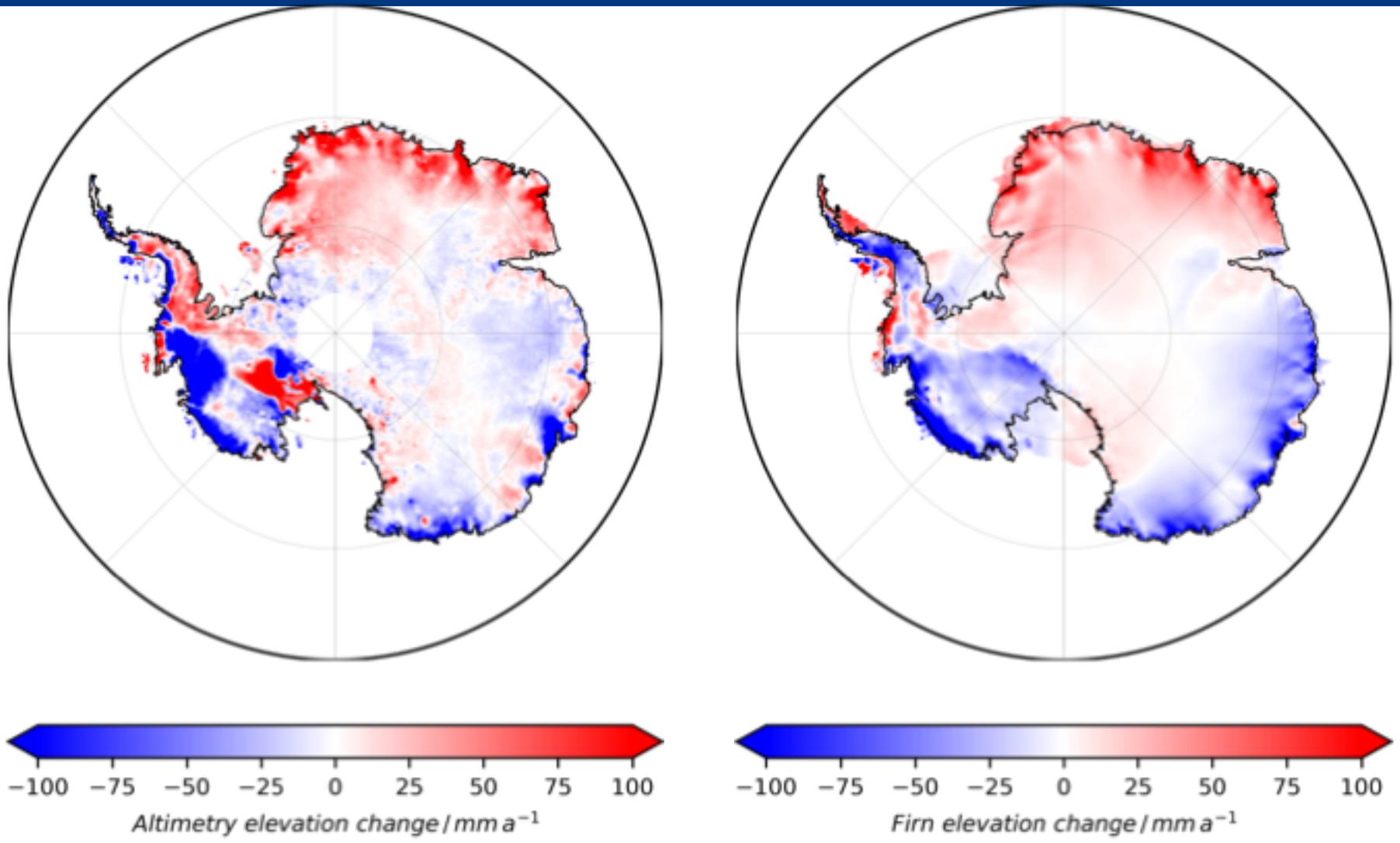
Velicogna and others, 2015

Impact of snowfall on Antarctic ice sheet mass changes





RACMO2.3p2 SMB/firn model vs. altimetry (April 2002 – August 2016)



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