

Station		D17		D47		
Variable	Period	Sensor	Accuracy	Period	Sensor	Accuracy
Wind speed	2010	RNRG 40C	$\pm 0.14 \text{ m s}^{-1}$ at 10 m s^{-1}	2010-2012	05103-L R.M. Young	$\pm 0.3 \text{ m s}^{-1}$
	2011-2018	A100LK*	$\pm 0.1 \text{ m s}^{-1}$			
Wind direction	2010	RNRG 200P	$\pm 4^\circ$	2010-2012	05103-L R.M. Young	$\pm 3^\circ$
	2011-2018	W200P*	$\pm 2^\circ$			
Temperature	2010-2018	Vaisala HMP45	$\pm 0.4^\circ\text{C}$ at -20°C	2010-2012	Vaisala HMP155	$\pm 0.3^\circ\text{C}$ at -20°C
Relative humidity	2010-2018	Vaisala HMP45	$\pm 2\%$ (RH < 90 %)	2010-2012	Vaisala HMP155	$\pm 1\%$ (RH < 90 %)
Snow height	2012-2018	SR50*	$\pm 0.01 \text{ m}$	2010-2012	SR50*	$\pm 0.01 \text{ m}$
Drifting snow	2010-2018	2G-FlowCapt™	not specified	2010-2012	2G-FlowCapt™	not specified

Table S1. Meteorological instruments installed at D17 and D47 along the respective observation periods (sensors marked with * are manufactured by Campbell Scientific, Inc.).

	D17	
D47	DS	nDS
DS	54.8 %	28.2 %
nDS	2.8 %	14.2 %

Table S2. Comparison of drifting snow occurrences at D17 and D47 over the period 2010-2012.

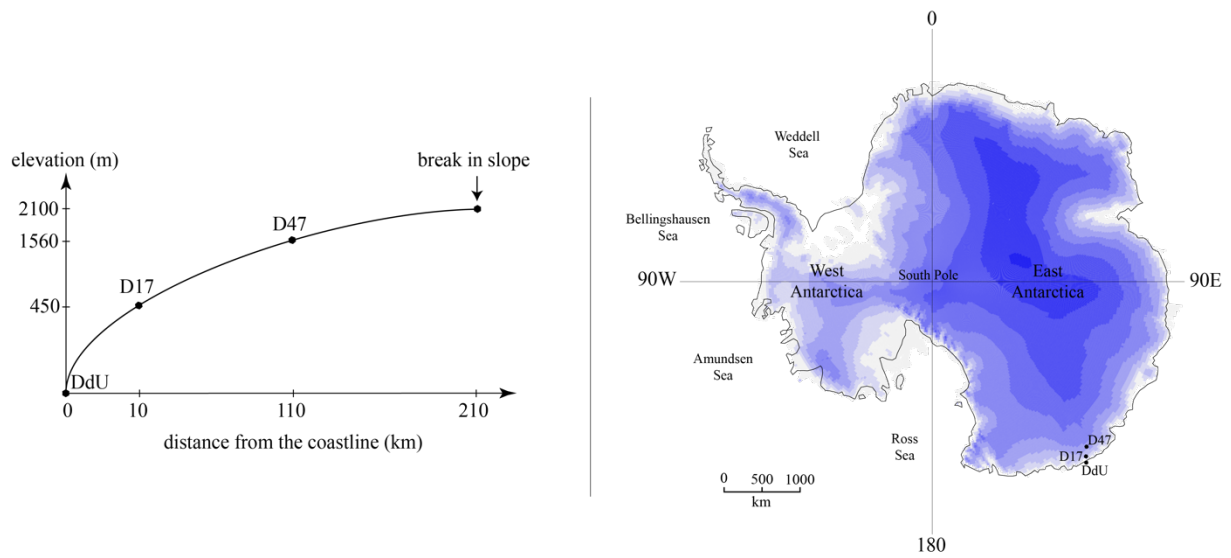


Figure S1. Location of Dumont d'Urville station (DdU) and sites D17 and D47 in coastal Adelie Land and schematic cross-section showing elevation and distance from the coastline for each site. Coloured contours show elevation each 500 m from 0 to 4,500 m.

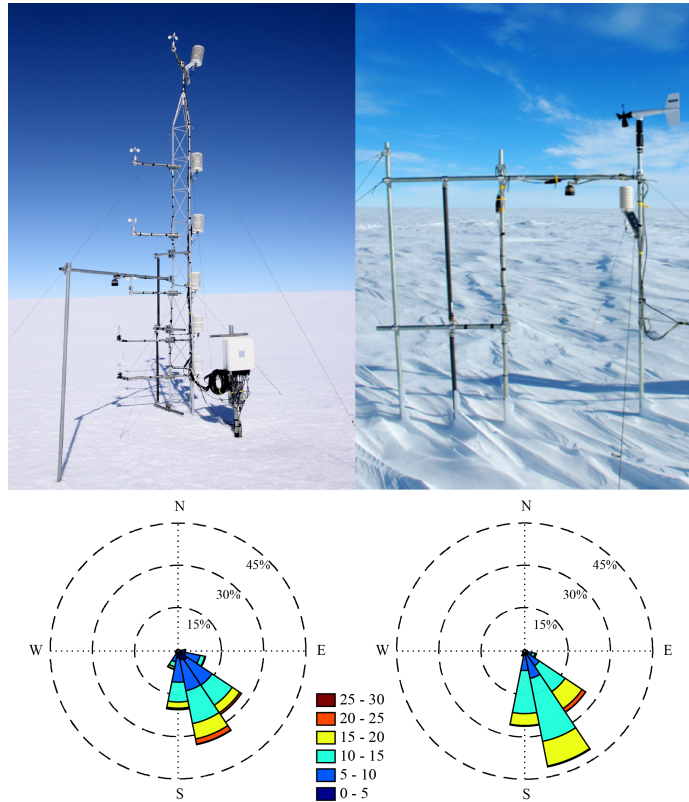


Figure S2. Pictures of the meteorological settings and wind roses at D17 (left panel) and D47 (right panel) for the respective observation periods. The wind direction at D17 is sampled at the upper level of the meteorological mast. The colours indicate the wind speed ranges in m s^{-1} .

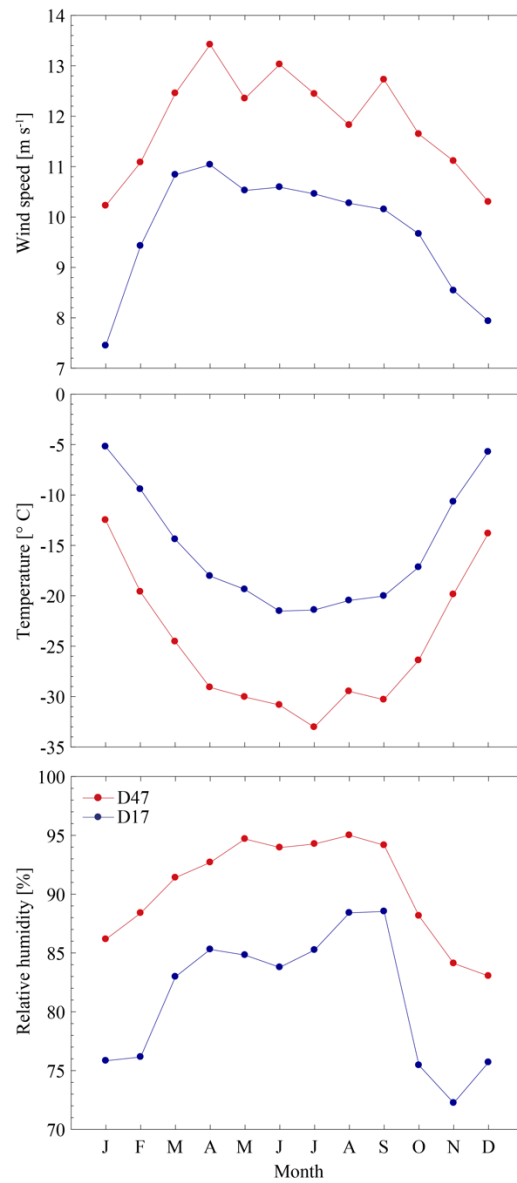


Figure S3. Monthly timeseries of wind speed (upper panel), temperature (middle panel) and relative humidity (lower panel) at 2-m height for D47 (red circles) and D17 (blue squares) for the respective observation periods 2010-2012 and 2010-2018. Mean values for each variable have been first determined from the measurement level closest to 2 m for each month of the observation period, and averaged within each monthly bin to produce monthly average values. The variability (standard deviation) is not shown due to the short length of the timeseries.

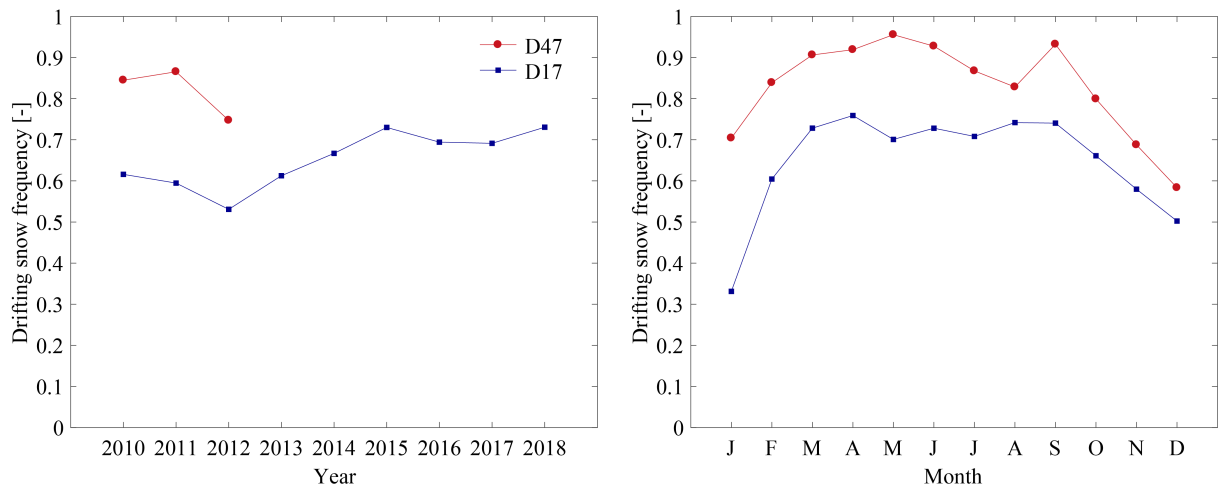


Figure S4. Inter-annual (left panel) and intra-annual (right panel) variability of drifting snow frequency at D47 (red circles) and D17 (blue squares) for the respective observation periods 2010-2012 and 2010-2018. Mean values have been first determined for each month of the observation period, and averaged within each monthly bin to produce monthly average values. The variability (standard deviation) is not shown due to the short length of the timeseries.