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Comparison of Föhn events at two Automatic Weather stations on the Larsen Ice Shelf, Antarctica

Amélie Kirchgaessner
British Antarctic Survey, Atmosphere, Ice and Climate Team, Cambridge, United Kingdom (acrki@bas.ac.uk)

Cole Peninsula and Flask Glacier are two Automatic Weather Stations situated on the eastern slopes of the Antarctic Peninsula mountain range, an area that regularly experiences Föhn events. Föhn events in this region are thought to have provided the atmospheric conditions that have led to the dramatic collapse of Larsen A Ice Shelf in 1995 and Larsen B Ice Shelf in 2002, the two northern most sections of the Larsen Ice Shelf on the lee side of the Antarctic Peninsula. While both stations are surrounded by very similar terrain, they are at a distance of about 100km from each other in north south direction, Flask Glacier at the northern edge of the remaining Larsen C Ice Shelf, and Cole Peninsula half way along its north south extension.
For this comparison the period from January to September 2011 is available. We compare measurements taken at both locations during “normal” conditions, and during Föhn. Measurements that are available for the comparison are air pressure and temperature, relative humidity, as well as wind speed and direction. We also compare the stations with regard to the frequency and duration of Föhn events.
We will present the results of the comparison as well as an analysis of the similarities and differences between the two data sets, and how these may influence the predictability of the future of Larsen C Ice Shelf.