I commend the authors for taking the time to improve the quality of the paper. The tone of the narrative is much more compelling and now fixes many of the previous issues of claiming novelty. The manuscript is nearly ready for publication and will surely be a great addition to the literature on ice-shelf instability, but I have one major comment and then some minor comments I would like to see addressed before publication.

Major comment

Abstract and Line 325-326: I was glad to see the authors include discussion on the Massom et al., 2018 paper which discussed how a lack of sea-ice cover allows swells to apply a strain to the ice-shelf fronts which happened during the collapses of the Larsen A and B. Although, I am not sure if the authors can claim the offshore foehn wind direction pushed sea ice away from the calving front without making a small analysis of this. While there are papers that discuss sea ice being influenced by large scale circulation patterns that create northwesterly flow across the Antarctic Peninsula (see Turner et al., 2002, Massom et al., 2006, Massom et al., 2008), to my knowledge there have been no studies that specifically connected foehn winds to sea ice conditions east of the Antarctic Peninsula. Likely the northwesterly direction of the foehn wind is the same as the northwesterly flow mentioned in previous studies, but perhaps it is only during these foehn periods when the sea ice is being blown of the ice shelf front. It could be a very interesting and insightful result if we see that the sea ice primarily responds to foehn winds and then this would really complete the argument for the importance of foehn winds on ice-shelf instability. Therefore, I recommend that if the authors want to connect the occurrence of foehn winds to sea-ice displacement, then they should analyze if there is a sea-ice response to periods of foehn winds or at least if there is a correlation between seasonal foehn wind occurrence and sea ice fraction. The sea ice fraction variable is readily available as an output in the ERA5 reanalysis.

Minor comments

Line 53: Fix parenthesis in citation.

Line 56: Figure 1b shows January 10, 1993, which was not during the collapse of the Larsen A or B. Please fix figure reference in text.

Line 105: Please elaborate more on the RACMO temperature biases? It is a little concerning to see the model has trouble simulating high temperature extremes when being used to study melting causes by high temperature extremes.

Line 118 – 121: I still don’t understand how the authors verify that the FöhnDA is the most accurate detection method. Looking at Supplementary Table 1, it appears the false negative and false positive foehn detections are simply foehn detections that did not agree with the FöhnDA. These false positives and negatives should be classified as something like detected agreement or disagreement. One way to test if a foehn event is “real” is to test with a different method such as an isentropic test (pressure levels showing a difference).

Line 151: Can the authors elaborate on how the variations in fohn jet location and wind strength explain why the SCAR inlet and Larsen C ice shelf are still intact? It seems like the difference in annual surface temperature is the main reason why these further south ice shelves are still intact as regions along the Larsen C receive frequent foehn winds. (Datta et al., 2019; Turton et al., 2018)

Line 163: The addition of figure 2b and the inclusion of the total melt hours percentage are very helpful and show that the foehn wind produces melt efficiently. It still would be good to know how frequent the foehn winds are as a percentage of all hours during the summer instead of just when melt is present.

Line 176: Replace with “large-scale”

Line 179: Previous studies have shown this to not be entirely true. Elvidge et al., 2016 explains the physical mechanisms for linear foehn winds which cause melt at the Larsen C ice shelf terminus and nonlinear foehn events which only cause melting by the base of the mountains. Still melting does occur more often at the base of the Larsen C mountains than at the ice shelf terminus. Please correct this sentence to account for the limited foehn melting that does occur at the ice shelf terminus.

Line 180: Good analysis, but the authors should cite Turton et al., 2018 which shows that foehn is detected more frequently at the base of the Larsen C mountains (see Cole Peninsula AWS vs AWS2).

Line 194: Should also cite Rott et al., 1996 here as that study first discusses the northwesterly flow that pushed the sea ice from the ice-shelf front

Line 226-228: The authors should cite Massom et al., 2018 and Turner et al., 2002 here as they discuss the lack of sea-ice cover and the atmospheric circulation patterns that caused the off-coast wind. Also going back to the major comment, this could be a good place to show if foehn winds progressively pushed the sea ice away from the ice-shelf front during the austral spring and summer.

Line 257-258: It could be helpful to reference Figure 6b at the end of the sentence regarding the LSR without foehn-related melt.

Line 275 – 277: I still do not understand why the temperature gradient alone does not explain the surface melt difference between ice shelves. The temperature gradient should also explain why foehn winds on the intact ice shelves do not produce large amounts of surface melt right? Unless the authors can explain that the foehn winds cause a different temperature change response between the collapsed and intact ice shelves. In fact from looking at Figure 5e and 5f, the temperature difference between foehn and non-foehn is slightly larger on the Larsen C than the Larsen A and B.

Line 341-342: Again regarding the sea ice, this is something not really proven in the manuscript. An analysis of the foehn wind/sea ice extent relationship would be helpful and make the manuscript even more compelling.

Works Referenced

Datta, R. T., Tedesco, M., Fettweis, X., Agosta, C., Lhermitte, S., Lenaerts, J. T. M., and Wever, N.: The Effect of Foehn-Induced Surface Melt on Firn Evolution Over the Northeast Antarctic Peninsula, Geophysical Research Letters, 46, 3822–3831, https://doi.org/10.1029/2018GL080845, 2019.

Elvidge, A. D., Renfrew, I. A., King, J. C., Orr, A., and Lachlan-Cope, T. A.: Foehn warming distributions in nonlinear and linear flow regimes: a focus on the Antarctic Peninsula: Foehn Warming Distributions in Nonlinear and Linear Flow Regimes, Q.J.R. Meteorol. Soc., 142, 618–631, https://doi.org/10.1002/qj.2489, 2016.

Massom, R. A., Stammerjohn, S. E., Smith, R. C., Pook, M. J., Iannuzzi, R. A., Adams, N., Martinson, D. G., Vernet, M., Fraser, W. R., Quetin, L. B., Ross, R. M., Massom, Y., and Krouse, H. R.: Extreme Anomalous Atmospheric Circulation in the West Antarctic Peninsula Region in Austral Spring and Summer 2001/02, and Its Profound Impact on Sea Ice and Biota*, 19, 3544–3571, https://doi.org/10.1175/JCLI3805.1, 2006.

Massom, R. A., Stammerjohn, S. E., Lefebvre, W., Harangozo, S. A., Adams, N., Scambos, T. A., Pook, M. J., and Fowler, C.: West Antarctic Peninsula sea ice in 2005: Extreme ice compaction and ice edge retreat due to strong anomaly with respect to climate, J. Geophys. Res., 113, C02S20, https://doi.org/10.1029/2007JC004239, 2008.

Rott, H., Skvarca, P., and Nagler, T.: Rapid Collapse of Northern Larsen Ice Shelf, Antarctica, Science, 271, 788–792, https://doi.org/10.1126/science.271.5250.788, 1996.

Turner, J., Harangozo, S. A., Marshall, G. J., King, J. C., and Colwell, S. R.: Anomalous atmospheric circulation over the Weddell Sea, Antarctica during the Austral summer of 2001/02 resulting in extreme sea ice conditions: ANOMALOUS ATMOSPHERIC CIRCULATION OVER THE WEDDELL SEA, Geophys. Res. Lett., 29, 13-1-13–4, https://doi.org/10.1029/2002GL015565, 2002.

Turton, J. V., Kirchgaessner, A., Ross, A. N., and King, J. C.: The spatial distribution and temporal variability of föhn winds over the Larsen C ice shelf, Antarctica, Q.J.R. Meteorol. Soc., 144, 1169–1178, https://doi.org/10.1002/qj.3284, 2018.