General Comments

The authors are to be commended for a novel, scientifically useful, and high-quality study. I really enjoyed reading it. I would characterize my comments as relatively minor, but within these minor comments the most significant is the comment about the seeder-feeder process.

Specific Comments

L33-36: Consider adding a citation for a recent study on the effects of shear-induced turbulence on aggregation and riming: https://doi.org/10.1175/JAS-D-17-0365.1

L60-90: There are some recent research findings that should be mentioned somewhere in this portion of the paper. First, in sea-effect events, increasing the cross-barrier on-shore wind speed has been shown to increase the overall precipitation amounts, and to shift the precipitation farther inland and over the higher terrain (https://doi.org/10.1175/MWR-D-19-0007.1 and https://doi.org/10.1175/MWR-D-19-0390.1). Second, in situations when the Froude number is insufficient for the flow to move over a coastal mountain range, air can be blocked along the coast, shifting the sea-effect snowfall maximum into the low elevations along the coast (https://doi.org/10.1175/MWR-D-19-0390.1 and https://doi.org/10.2151/jmsj.2014-105).

L173-176: 80% rain seems like a very large fraction of rain for an algorithm to eliminate rain. Perhaps 40% would be more appropriate?

L180: Does the 'normalized frequency' include only precipitating periods? Is it frequency relative to all precipitating periods or frequency relative to all time elapsed during the 20 events?

Section 3: The information and analysis presented in this section is excellent.

L404-408: The data suggests to me that the increased turbulence in the 3–3.5 km layer is not just causing increased aggregation, but also riming. Below 3 km in Fig 3, the velocity spectrum shifts to the right (faster fall velocities). This would be consistent with graupel now appearing in the spectrum of hydrometeors.

L430-434: Aggregation becomes more likely at warmer temperatures. Does the airmass become colder (at a given altitude) as it moves inland? This may be beyond the scope of the paper – I am just curious.

L448-450: The authors have shown very convincing evidence that both riming and aggregation increase from YPO to CPO, but I think this sentence does not quite support the argument. In my opinion, the way to make the argument for both riming and aggregation would be to say something like "the doppler velocity spectrum at CPO has a similar median to that at YPO, but the spectrum is much wider, suggesting an increased frequency of both slow-falling aggregates and faster-falling rimed particles (Fig 8)." The next sentence, mentioning Figure 9, seems great and does not need any change.

L486-488: The difference in slope that the authors are speaking about here is very difficult to discern…perhaps consider reducing the range of the X-axis in the reflectivity CFADs and the slope will be more apparent?

L494-495: I'm confused by this statement, because it appears to me in Fig. 11b that GWU has a higher frequency than YPO in the smallest D_m bin.

L484-504: I think that the authors have presented solid evidence for aggregation being the dominant growth mechanism at GWU, but I don't see how that indicates that the seeder-feeder process is happening. The seeder-feeder process involves a dual-layer cloud structure, and that has not been shown. This is the most significant issue with the paper, in my opinion.

L525: This paper (https://doi.org/10.1175/MWR2874.1) occurs in a somewhat comparable regime (sea-effect snowfall) and they document the tendency for increased riming over even relatively small peaks. It corroborates the results of the present study nicely.

Technical Corrections

Is it possible for the black-and-white figures be made into color figures? They are difficult to read.

Fig. 1: if the size of the markers were reduced by 30%, the reader could see the terrain in the vicinity of the sites a bit more easily.

L445: All I see in the PDF I am reading is "m s^{-1}" with no number. This could be an error by the Copernicus website.

L464: I can see "2.5 m s^{-1}", but the other wind speed in this line says "m s^{-1}" with no number. This could be an error by the Copernicus website.

Is it possible to list the mean liquid-precipitation-equivalent rate for each site in Figs 6, 8, and 10? It would be somewhat informative to know what these radar characteristics translate to as far as liquid rates.