

## ***Interactive comment on “Surface mass balance and water stable isotopes derived from firn cores on three ice rises, Fimbul Ice Shelf, Antarctica” by C. P. Vega et al.***

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The paper presents surface mass balance data for the Fimbul ice shelf based on three firn cores. The paper is clearly written and well presented. The authors provide a good introduction to the region and the previous studies that have taken place. The paper should be accepted and I only have very minor comments to make.

KC core- I am not convinced of the dating for the KC core. The seasonal cycles in figure 2 are very difficult to see. The use of nssSO<sub>4</sub> tie points should help but the volcanic horizons presented in figure 4 could easily be shifted. The disadvantage of the coastal locations are the increased variability in the nssSO<sub>4</sub> record and very few large volcanic events during the time period investigated. Future drilling at this site

C1

would need alternative dating methods in place.

Page 5, line 1 – the words “ice rises cores” is a bit tricky to read. Could you perhaps rephrase to “ice rises and drill sites” ?

Page 5, Line 27 – You make the assumption that there is uniform precipitation throughout the year. Is this true? Have there been studies on the seasonality of precipitation in this region you could refer to? If not, what does the reanalysis data suggest for the seasonality of precipitation on FIS?

Page 7, Line 24 – use of the words “In addition” is not necessary

Page 11, Line 10 sentence starting “especially attractive...” needs rewording. Suggest “The KM and BI sites are attractive . . .”

Figure 2 – the seasonal cycle at KC is very difficult to distinguish. Does altering the x-axis make the peaks any clearer?

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