

Interactive comment on “Interannual Variability of Summer Surface Mass Balance and Surface Melting in the Amundsen Sector, West Antarctica” by Marion Donat-Magnin et al.

David Bromwich

bromwich.1@osu.edu

Received and published: 16 July 2019

This is a comprehensive analysis.

One major shortcoming is that it really underplays the comparisons of the present results with those obtained by Deb et al. (2018) also based on regional climate modeling for 1979–2015 summers where a leading conclusion is:

"El Niño episodes during austral summer drive warmer conditions over Amundsen Sea Embayment ice shelves that cause enhanced surface melting".

El Niño influences play a relatively minor role in the current analysis. The explanation

C1

likely lies in the discussion on lines 475–486.

I didn't think the analysis for a lagged relation between El Niño forcing SMB/melting (Fig. 13) to be very compelling, at best possible.

I don't understand what is meant by humidity divergence (Figs. 10 and 11). Normally one evaluates moisture transport divergence in relation to P–E. Please clarify.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2019-109>, 2019.