The Cryosphere Discuss.,
doi:10.5194/tc-2016-142-RC2, 2016

The Cryosphere Discussions
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Interactive comment on "Three-year monitoring of stable isotopes of precipitation at Concordia Station, East Antarctica" *by* Barbara Stenni et al.

Anonymous Referee #2

Received and published: 23 July 2016

Evaluation of Manuscript General comments: This paper showed daily oxygen and hydrogen isotope compositions of snow over three years at EDC station, Antarctica. The data provide fundamentally important information to interpret the climate records from the Antarctic ice cores. The authors showed that temporal slope of d18O vs 2-m air temperature is smaller than the spatial one, which is generally consistent with previous a few observations in other sites. They also categorize the snow based on crystal morphologies. Overall, the manuscript is easy to understand, and provides very precious data set. I recommend accepting the paper after the authors address minor comments below.

Specific comments:

P6 L. 18-19: The precipitation. . .. were examined daily using a magnifying lens and a

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Discussion paper

high-resolution camera to determine these three board types of precipitation (snowfall, diamond dust, and hoar frost).

- Please show typical photographs showing the three types of snow crystals. Such information is necessarily to evaluate the validity of the categorization and to conduct a similar observation in aother Antarctic site.

P11 L. 11: characterized by a higher scatter and by slightly lower d/T slope

- I agree it seems to show a lower slope, but I cannot see a higher scatter. In addition, the temperature at which the slope changes appears to be around -50 degC.

Technical corrections:

P7 3.1. Observed and simulated variability of temperature. . .:

- Observed and simulated variabilities?

Figure 2

- Please add precise explanation for the each panels, axes, lines and symbols in figure caption. The legends in the figs are vague and difficult to read.

- Figure 2c would be separated from Fig. 2a and Fig. 2b. Fig. 2c is not directlly relevant to Figs. 2a and 2b.

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