Biogeosciences
Discussions

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Interactive comment on "Atmospheric aerosol deposition fluxes over the Atlantic Ocean: A GEOTRACES case study" *by* Jan-Lukas Menzel Barraqueta et al.

Anonymous Referee #1

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bg-2018-209 Submitted on 26 Apr 2018 Atmospheric deposition fluxes over the Atlantic Ocean: A GEOTRACES case study

Minor typos and comments Page: Line: Comment:

3: 17: use particle collection

3: 27: The MADCOW model uses more than one parameter; the residence time is a derived or assumed value, and it is probably the least well know term in the equation.

4: 17: Please express the acidification of the samples with the molar concentration of acid added. For example, if you add 4 mL of 6M HCl per liter, you added 0.024M HCl.

That would have a pH around 1.7-1.8.

4: 31: The dissolved Al must be in moles per cubic meter units.

14: 9: enhanced

14: 11: likely results in

14: 26: and was somewhat lower

15: 10: constraints

15: 12: sites

15: 15: I would delete "which implies a major strength of the approach used in this study" because this study does not reveal anything substantially new about the use of dissolved Al in the MADCOW model.

15: 18: such as

15: 30: Special thanks

Figure 6: panel (b) needs coordinate values on the axes.

Table 1: Should compare to DEAD dust fluxes, not Mahowald.

Table S4: Add two columns to show the residence time and aerosol Al solubility used for the dust flux calculation for each station number.

Figure S5: This is the most useful figure and should be moved into the main body of the paper, where you could discuss why the calculated dust fluxes disagree or agree with the DEAD model fluxes. Is the disagreement due to differences between the observed and BEC-modeled dissolved Al inventories or because you used a higher fractional aerosol Al solubility?