

Review of “Dry season aerosol iron solubility in tropical northern Australia”, by V. H. L. Winton, R. Edwards, A. R. Bowie, M. Keywood, A. G. Williams, S. Chambers, P. W. Selleck, M. Desservettaz, M. Mallet, and C. Paton-Walsh (ACP-2016-419).

The revised paper represents a substantial improvement over the initial submission. However, in my opinion, a number of issues need to be addressed prior to publication.

Typographical/clarity issues

P4L11	“attached with” should read “equipped with”, or something similar
P5L16	“acidified to” should read “acidified with”
P8L10	“accompanied with” should read “accompanied by”
Section 2.3.2	title should be changed to reflect the fact that the section describes more than total iron concentrations (nss-K, trace elements)
P7L5	“tissuquartz” should be capitalized
Section 3.2	Reference should be made to the relevant figures here. In addition, the lettering used is confusing: I see that A and B are taken for dust events, and C presumably refers to coastal conditions, so why are EFGHI used for the biomass burning events (<i>i.e.</i> where is D)?
Section 3.3	This seems more appropriate for the methods section; otherwise, the manuscript skips back and forth between campaign-related information and methods-related information. In addition, “similar to other studies of instantaneous soluble Fe” should have a reference.
P9L15–18	the Fe data seems to be shown in Figures 3 and 5, not 4 and 6; in addition, it’s not clear to me what is meant by “distinct events”
P10L4	parentheses confusing as written
Sections 4.1 and 4.2	it would be clearer if all results were presented using the same units (either of ug/m ³ or ng/m ³)
P10L16	“topical” should read “tropical”
P12L13	“peaked to” should read “reached”
P13L19	“parties” should read “particles”
P14L15	“courser” should read “coarser”
P15L2	“factional” should read “fractional”
P15L19	“SAFRIED” should read “SAFIRED”
P15L29	“import” should read “important”
P16L8	“Little is known about the fractional Al, Ti and Mn solubility in biomass aerosols future work” should be revised.
P16L18	“desserts” should read “deserts”
Figures	consistency needed in the text re: use of “Figure X” vs. “Fig. X”

Technical issues

Section 2.3.2	Do the reported total/soluble Fe values reflect these blank concentrations? It’s unclear as written. What is the variation in the blank values? Several reported concentrations (GP16, GP15) are not much higher than the blanks, so this requires explanation.
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Issues with data interpretation / presentation

- Section 4.3 I disagree with the authors' presentation/interpretation of information in Figure 7. First, the data doesn't sit in "two narrow clusters"—the two clusters overlap, and are both quite broad. Second, the total aerosol loading in both clusters is much higher than the Sholkovitz data points, *i.e.* not "moderate". Finally, the reason behind the relationship presented by Sholkovitz (combustion sources with high Fe solubility mix with dust with low solubility) is not the relationship discussed in the present paper, where the solubility was lower when nearby fires were present. A discussion of aged/non-aged combustion Fe would illuminate this discrepancy; as written, it's confusing.
- Section 4.6 This section is generally confusing to me—it contains a mixture of raw data, data interpretation, and extrapolation/prediction. I would suggest re-writing in a way that more clearly links the observations in the present paper to the conclusions being made.