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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Dry season aerosol iron solubility in tropical northern Australia" *by* V. H. L. Winton et al.

Anonymous Referee #1

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The manuscript reports results from analyzing gaseous and particulate matter collected from a field campaign in Australia during the dry season. The objective is to correlate the fraction of soluble iron to markers from natural and anthropogenic sources of aerosols, and to compare the amount of soluble iron in aerosols from this site to other sites reported in the literature.

Overall the manuscript is organized and describes the trends in the figures and tables in detail. The major weakness of the manuscript is that there are key observations mentioned in the manuscript from data presented in a manuscript in preparation by Mallet et al. (See pages 4, 8, 12, 13, and 14). Hence, either the authors show the relevant data from that manuscript to support their arguments or wait on submitting this manuscript till the one by Mallet et al. is published.

The comments below are minor and intended to improve the readability of the manuscript:

- The abstract is too long and contains a reference, which is not recommended. Revise for brevity and to highlight the main findings of the manuscript, - Show correlation plots for soluble iron concentration versus oxalate and versus black carbon to support the discussion section, - On page 3, combine paragraphs 2 and 3, - On page 7, line 15, list the major cations and anions, - Revise the manuscript for long sentences (more than 3 lines in length) and shorten them, - On page 9, switch the order of sentences between lines 5 and 10 to present data in Fig. 3 then Fig. 5, - Revise the manuscript for consistency in citing figures as 'Figure' or 'Fig.', - On page 10, comparisons with previous related work is summarized. It would be better to make a graph that highlights the similarities among different sites, - On page 15, cite a recent review article published on the surface and bulk chemistry of iron that is related to the discussion in this section: "Al-Abadleh, H. A., A Review on the Bulk and Surface Chemistry of Iron in Atmospherically-relevant Systems Containing Humic Like Substances. RSC Adv. 2015, 5, 45785 - 45811.", - Use different types of marker shapes for Figure 7, - Rearrange figures in Figure S1 to enlarge font size in numbers and axis labels, - Use different line styles for Figure S2,

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