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## ***Interactive comment on “Solubility of iron and other trace elements over the Southern Indian Ocean” by A. Heimbürger et al.***

### **Anonymous Referee #1**

Received and published: 13 May 2013

Solubility of iron and other trace metals over the Southern Indian Ocean, A. Heimbürger, R. Losno and S. Triquet

General remarks: This article contains relevant and resent scientific questions and should be published by Biogeosciences after revision. However several abstracts need to be re-written to clarify what the authors really mean in them. I also think that the title needs to be altered as at present it is formulated very loose. My biggest concern with this manuscript though is that I do not really know what the authors mean with the term solubility as it is used in a different meaning between e.g. the atmospheric and oceanographic communities (see also the publication by Baker and Croot, 2010 which is cited in the present manuscript). The manuscript at present states this term with a simple percentage and it should at least once be explained what exactly is meant with

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it. It also would be very useful to know why the different trace elements measured were chosen and what their biogeochemical relevance is. Furthermore the results obtained in the study should be discussed in more detail and also linked to the presented figures. Why for example shows Figure 4 such big error bars?

Specific comments:

I recommend including the word “rain and/or aerosol” in the title as the formulation “over the Southern Indian Ocean” is confusing.

P6066 L8: Somewhere in the manuscript should be stated why this combination of trace elements was chosen L10: 70% of what? The weight of the aerosols?

P6067 L1-3: This sentence needs more explanation as it is hard to understand what the authors mean with it

P6068 L1: insert “and” before direct measured

L8+9: Rewrite this sentence like: To our knowledge up to now such measurements haven never been taken over this oceanic region

P6069: Delete washing in the title L7: supplier of the filters?

P6071 L5; why was the pH only 2008 measured and not in the later campaigns as well; this supplies essential information

P6072 L6: replace “The” with “These” and “too” with “as well” L22: replace “turned out to be” with “were” L25: reference for the geostandards; where can this information be looked up?

P6075 L5: short explanation how this can happen L18: Add: Only the 3 not contaminated samples will be further discussed

P6076 L6: add for the three not contaminated L22: add here for example why each of this metals were measured and what specific information each can contribute L26-28:

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Reword or split this sentence

P6077 L10: Please insert a reference for this statement

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Interactive comment on Biogeosciences Discuss., 10, 6065, 2013.

**BGD**

10, C1834–C1836, 2013

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C1836

