

Interactive comment on “Influence of measurement uncertainties on soluble aerosol iron over the oceans” by N. Meskhidze et al.

Anonymous Referee #2

Received and published: 9 October 2015

Overall a potentially good contribution to the paper, although the title is a little broader than the paper actually is.

The paper really discusses how differences between the size of the particles in dust models and in measurements are a bit mis-matched. There are so many other influences of measurement uncertainties on soluble aerosol, especially the definition of soluble iron (which is appropriately reviewed in the introduction), that cause uncertainties, and this is one of them that was not previously highlighted. So somehow the title should be modified to be more accurate. For example “influence of aerosol size on measurements uncertainties in soluble iron over the oceans”?

It is unclear why the authors only consider dust: the same problem should exist for other sources of iron as well, or probably even worse, especially finer particles from

combustion? Why not consider those? You could presumably do this rather easily, just assuming BC has Fe, and including the size distribution of BC? There are recent reviews of the size of combustion iron particles (e.g. Wang et al., 2015, ACP).

The paper is a little on the light side, so if they add in just a simple estimate of the iron from combustion, using BC as a proxy and how that would also add to this problem, it would seem sufficient for publication.

Otherwise the paper is well written and interesting, if a bit light.

Interactive comment on Biogeosciences Discuss., 12, 14377, 2015.

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12, C6388–C6389, 2015

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