

Interactive comment on “Elevated atmospheric mercury concentrations at the Russian polar station Amderma during Icelandic volcanoes’ eruptions” by Fidel Pankratov et al.

Anonymous Referee #2

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This paper presents some very interesting data and merits publication, just not in its current form.

In general, the paper needs English re-editing, the grammar and phrasing make it difficult to read at times. There are some spelling problems, e.g. page 1 line 24 a different spelling of the Icelandic volcano is used, or is it a different volcano (understandable seeing how hard Icelandic spelling is, but more care could be taken)?

Page 6 line 30, coincide not co-inside

A lot of the references are quite old, the thesis was published in 2015, but this paper is 2019, mercury science has moved on, the authors should carry out a new literature

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search and include papers from 2015 onwards. Where conference papers have been cited, the authors should see if the conference paper lead to a real one, if not, the data should be disregarded, they can be safely eliminated from the references and replaced with a more modern reference.

This paper demonstrates that some of the peaks in the long-term trends of measurements could come from volcanic eruptions that occurred in 2010 and 2011 in Iceland. However, before this can be successfully shown to be true it would be useful to know where the other peaks come from so they can be eliminated as possibilities from this analysis. There are similar sized peaks in 2012 and 2013 that are not identified or discussed that probably aren't volcanic eruptions. What are their sources? They look very similar to the volcanic eruptions, are we sure that the cause isn't the same? A similar observation can be made for the data from 2009 back to 2001, there are frequent peaks of data above 4 ng/m³ but no description of their sources or causes, why are they so similar, and how can we be sure that the peaks in 2010-2011 are not caused by the same sources with volcanic plumes superimposed? The authors should discuss the whole data set and identify the other peaks, or they should not include them and talk about in more detail the volcanic data.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-1228>, 2018.