Atmospheric Measurement Techniques Discussions

Atmos. Meas. Tech. Discuss., referee comment RC1
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Comment on amt-2021-153

Anonymous Referee #1

Referee comment on "Behavior of KCl sorbent traps and KCl trapping solutions used for atmospheric mercury speciation: stability and specificity" by Jan Gačnik et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2021-153-RC1, 2021

Review Gacnik et al. AMT

Abstract-the authors need to note that GOM and PBM are formed in the atmosphere not just emitted from sources

I disagree that the work done at ambient air concentrations are limited. The cation exchange membrane method detection limits are well below ambient concentrations.

Introduction

Line 26- first sentence of the abstract need a reference. Second sentence this is simply not true!

Line 40 -PTFE membranes are used to collect PBM not GOM. Nylon and CEM collect RM when there is no PTFE in front.

Line 46 start new paragraph with “Most”.

Line 65- Again, it has been well documented that CEM can be used to measure ambient concentrations

Line 69- should be that CEM and nylon retain GOM if placed downstream of a PTFE membrane.

I know this may be a bit unconventional, but to make the results clearer would it be better to combine the methods and results.

For example, section 3.1 List the aim of the experiment, describe the experiment, discuss the results. I think this might make this paper easier to follow.

Section 3.1 The observation that GEM is being taken up by the KCl coated surfaces is interesting.

Section 3.4 would be good to add a description of the other air used including any air chemistry you might have.

Line 372-Please note recent data with membranes and dual-channel systems have demonstrated that GOM is typically 25% in ambient air.

Conclusions-It is important to note that most people do not now use the 1130/1135 unit on the Tekran system and papers with these data are not even being sent out for review.

It is nice to see others developing data regarding the lack of utility of KCl coated things for GOM collection.

Figures 10 and 11 remove gridlines. You might consider putting figures like this in the Supplemental Information.