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Atmospheric Measurement Techniques Discussions

Interactive comment on "Interference of sulphur dioxide to balloon-borne ECC ozone sensors over the Valley of Mexico" *by* I. Kanda et al.

Anonymous Referee #1

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The paper reports on interference from SO2 on ozone measurements in ozonesondes in Mexico City. Clear impacts are seen from the Popocatepetl plume, and a less clear profile exhibits interference from the Tula Industrial Complex plume. Unfortunately, the method is not new and there is no new development reported. In fact, Morris et al., which is cited in the paper, goes beyond what is reported here to use the interference to measure SO2 as well as O3. The interest of the paper is therefore more as a case study of SO2 plumes than as a measurement technique which would have been appropriate for Atmospheric Measurement Techniques. My impression is that focusing on the SO2 plumes would make a more interesting and more coherent paper in a more appropriate journal.

Other comments:

Only a few of the profiles are reported in this paper – it might be good to present more of the data to show the difference between the interference and no interference days.

Page 302, line 19: The modeling section could be a separate section. From what is reported, it seems that some estimate could be made of SO2 concentrations. The modeling section could be expanded to evaluate the simulation of the volcano plume if the paper were rewritten as a case study. Along these lines, it was not clear to me what the purpose of the green curve in Fig. 6 was. This could be expanded within a more thorough modeling section to estimate the impact of the Tula sources.

Fig 3: I'm not sure that taking the log helps understand what is going on.

Figs 9 & 10: Would these not look better as windroses?

There are not enough citations of existing literature. For example there have been more studies of the emissions of Tula. In the introduction there could be some more references to health effects where those are mentioned, and more links to past studies in Mexico City.

There is a need for more proof reading and editing.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 293, 2014.