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Atmospheric Measurement Techniques Discussions

Interactive comment on "A new method for total OH reactivity measurements using a fast Gas Chromatographic Photo-Ionization Detector (GC-PID)" *by* A. C. Nölscher et al.

Anonymous Referee #3

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The authors presented a new method to quantify OH reactivity in the ambient air using a relatively simple system. The importance of constraining OH lifetimes to constrain chemical sinks of OH has been highlighted as the authors described in the text. Therefore, this research paper certainly will be a valuable resource to researchers who want to take advantage of the relatively simple instrumental configuration to their research. In this context, I think that this paper has enough merits to be published in AMT after addressing following questions and comments.

Major Concern: It is appeared that the authors were using VOC scrubbed air as a zero

air to estimate the “C2” state. If the scrubber is removing all the VOCs and not other inorganic reactive gases such as SO2 and NO2, then the values estimated from the experimental configuration should be called “OH reactivity from VOCs” rather than “total OH reactivity”. Please address this concern in the revised manuscript. In addition, the authors should also discuss further what would be the chemical processes of the inorganic reactive gas species inside of the converter.

Minor Concerns:

Page 3577 Line 5: Formaldehyde photolysis should be a HO2 source rather than an OH source Page 3577 Line 13: How about OH recycling? Some research results also indicate that this is equally or even more uncertain in terms of understanding OH chemistry in the troposphere especially BVOC rich environments Page 3573 Line 29: It needs more quantitative descriptions on “optimum conditions”

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 3575, 2012.