

Interactive comment on “Development and testing of an online method to measure ambient fine particulate Reactive Oxygen Species (ROS) based on the 2',7'-dichlorofluorescin (DCFH) assay” by L. E. King and R. J. Weber

Anonymous Referee #2

Received and published: 4 June 2013

The atmospheric research studies have shown a recent surge of interest for the presence of reactive oxygen species on respirable particles and their effects on human health, and this manuscript is likely to have important influence and guidance for all that future research studies, especially due to the fact that offers possibility to measure ROS in real (near-real) time. The research is well-thought out and carefully conducted. All experimental procedures are described with sufficient information. The results are presented in an easy to follow way and also discussed in detail. The paper is very well written, clear, thorough with appropriate use of previous work. I have almost no

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typographical, clarity or grammatical comments to make. Figures and tables are clear, well-organized and contribute to the paper. At this point I recommend this article for publication and have a couple comments/suggestions that authors should consider: 1. Section 4.4 Collection efficiency of the system: the authors measured relative particle collection efficiency (compared to PILS efficiency) and not absolute. How efficient is the PILS in total particle collection? Have you ever performed experiments with your system and checked what is collection efficiency of the mist chamber in terms of total particle number entering and exiting the chamber, or even step more to see size distribution of particles entering the system and trapped by the mist chamber? 2. Page 3294, Line 14: LOD for ROSp is 0.15 nmol H₂O₂ equivalents m⁻³. However, in the text below Figure 9 LOD for ROSp is 0.5. It should be corrected. 3. Table 2, last column with values for standard deviation: it is not clear if that is the STD of mean values (although those values seem to be in the first column) or what? Please make it clearer. 4. Table 4: For the results from the present study (Atlanta, GA), does the value 0.25 ± 0.01 represent average from all 3 sampling locations? If yes, then you cannot call it only Atlanta, GA. If that is only Atlanta, GA sampling site then you did not sample in June, but only May and July. Please check that.

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 3279, 2013.