

Interactive comment on “Intercomparison of two Comparative Reactivity Method instruments in the Mediterranean basin during summer 2013” by N. Zannoni et al.

Anonymous Referee #1

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Zannoni et al. presented intercomparison results between two CRM systems for OH reactivity observations. It has been shown that even multiple sets of identical instrumentation may produce significantly different results in intercomparison exercises. Therefore, the presented intercomparison results will be beneficial to researchers who actually utilize the technique and are interested in interpreting observational data from the CRM OH reactivity method. In this context, I support the publication of this manuscript with minor revision. Below are the specifics, required further clarification.

1) Figure 6: It does not seem that the linearity between the two parameters is statistically relevant. Notating R2 values would be helpful. The explanation about the

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observed inconsistency in the text (Page 5084 line 20 to Page 5085 Line 2) is not comprehensive enough for readers to understand the physical reasons for the experimental results. In the description, both techniques are using an exactly identical reactor then between the analytical systems what could be possible causes for the observed different behavior if the inhomogeneity in the reactor could cause the observed inconsistency? In addition, the argument about different reaction rates between propane and propene, explained for a main cause for the inconsistency needs further clarification. 2) Figure 7 and 8: It is appeared that the statistics are driven by the high reactivity points, higher than 50 s⁻¹. As most of ambient OH reactivity probably below 50 s⁻¹, it will be more informative to show plots for lower reactivity data points only between 0 to 50 s⁻¹.

Minor comment: There are a couple of acronyms without clarifications in the abstract.

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