

## ***Interactive comment on “Comparison of OH reactivity measurements in the atmospheric simulation chamber SAPHIR” by Hendrik Fuchs et al.***

### **Anonymous Referee #3**

Received and published: 31 August 2017

The paper presents detailed results of two intercomparison campaigns for measuring the OH reactivity carried out at the high volume atmospheric simulation chamber SAPHIR. 9 instruments for measuring the OH reactivity operated by 8 different groups did participate in these campaigns. The measurement techniques were based on: i) Comparative reactivity method (3 instruments), ii) Laser-photolysis laser-induced fluorescence (4 instruments), iii) Flow tube technique with LIF (1 instrument), iv) Flow tube technique with chemical ionization mass spectrometry (1 instrument)

Experiments were conducted under a variety of conditions for characterizing instrument performance, linearity, zero values, varying concentrations of CO, CH<sub>4</sub>, and reactivity

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measurements in the presence of biogenic and anthropogenic mixtures of VOC

The intercomparisons were made not-blind, although a first data submission without the knowledge of final results from other participants was made. After that data were allowed to be revised.

The results of the intercomparisons could help to improve instrument performances in the future, especially for CRM

The paper is very well written and suitable for AMT. The work addresses an important scientific problem and provides use data and interpretations

Authors comment that in previous field work large unexpected OH reactivity was found, both in biogenic and urban environments, but the results of the intercomparison showed that the contribution of OH reactivity of terpenoids and other oxygenated compound is underestimated by CRM techniques. Could the authors extend the comments about this issue, and if the results of these intercomparison campaigns could lead to a re-interpretation of data results for some of the field works?

Other minor or typo comments:

Table 2. Please specify the detection technique for GC measurements e.g GC-FID, GC-MS,

VOCS from plant chamber: Could the authors give more experimental detail about experimental conditions e.g: flow used for plant emission transference to SAPHIR, humidity changes during experiment, number of trees used for the experiment, etc

Page 5, paragraph 10, last sentence: Replace ‘...but measurements by this instruments failed...’ by ‘...but measurements by this instrument failed...’

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-231, 2017.

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