Anonymous Referee #1: Suggestions for revision

Comment 1: *1. Page 6, line 87, though the LoD of PTR has been stated by the authors, but the LoD for other instruments, including those used for the measurement of HCHO, HONO, NOx, O3. These values are expected as experiments were conducted with atmospheric relevant concentrations of reactants and at atmospheric conditions.*

Response: The LoD of all used instruments was added to Table S1 in the Supplement.

Table 1. Instrumentation for radical and trace gas detection in the experiments.

measured quantity	**measurement technique**	**time resolution**	**accuracy ($1\,\sigma$)**	**LoD ($1\,\sigma$)**
OH	laser-induced fluoresence (LIF)	47 s	13 %	$0.7\times10^6\,\mathrm{cm}^{-3}$
HO_2, RO_2	laser-induced fluoresence (LIF)	47 s	16 %	$0.8\times10^7\,\mathrm{cm}^{-3}$
k_{OH}	laser photolysis + LIF	180 s	10 %	$0.3\,\mathrm{s}^{-1}$
Δ^3-carene	proton-transfer-reaction mass-spectrometer	40 s	7 %	2 pptv
CO	cavity ring-down spectroscopy	60 s	1 ppbv	80 ppbv
NO	chemiluminescence	180 s	5 %	4 pptv
NO_2	chemiluminescence	180 s	5 %	2 pptv
HONO	long-path absorption photometry	300 s	20 %	5 pptv
O_3	UV-absorption	10 s	5 %	1 ppbv
HCHO	Hantzsch monitor	90 s	8.5 %	0.1 ppbv
HCHO	cavity ring-down spectroscopy	300 s	1.5 ppbv	0.1 ppbv
photolysis freq.	spectroradiometer	60 s	10 %	[a]

[a] several orders of magnitude lower than the maximum value at noon

Comment 2:*2. The atmospheric relative humidity is much higher than 20%. Why RH for the photooxidation experiments were around 80% at the beginning of the experiment while it was 20% for the ozonolysis experiments?*

Response: During the photochemistry experiments water vapour is needed for the production of OH radicals from the photolysis of ozone. The yield of OH radicals only depends on the absolute water mixing ratio and not on relative humidity. No other water vapour effect is expected. Over the course of the experiment in the illuminated chamber the relative humidity decreased to much lower values than the initial value of 80% due to the increase in temperature. During the ozonolysis experiments, water vapour is not expected to play a role for the chemistry investigated in this work. Therefore, the difference in the initial relative humidity in the photochemistry experiments and the ozonolysis experiments does not play a role for the results of this work.