Atmos. Chem. Phys. Discuss., 11, C8406–C8408, 2011
www.atmos-chem-phys-discuss.net/11/C8406/2011/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "ClOOCl photolysis at high solar zenith angles: analysis of the RECONCILE self-match flight" *by* O. Sumińska-Ebersoldt et al.

O. Sumińska-Ebersoldt et al.

o.suminska@fz-juelich.de

Received and published: 31 August 2011

First of all, we would like to thank Referee for the very helpful comments. Most of them are straight forward and the suggested changes were adopted in the manuscript.

As recommended we provided more information on the match-technique and field campaign. The Section, in which investigated spectra and cross sections were introduced, is moved after Section 'CLaMS Simulation' and its starting sentence is rewritten.

We reworded second reason for the scaling of relative spectra to Lien et. al.

pg 18908 L26: Why is it important for your study to describe the COPAS measurements in such details? Are these details really necessary here? I assume that this description belongs to the paragraph 'To examine the accuracy of the matches...' and so I would combine the two paragraphs between L21 and L7 (pg18909).

We decided to leave a shortened description of COPAS and HAGAR in the Section 'Measurements', because this Section describes all the technical details including measurements.

pg 18913 L2: Why did you use krec from JPL09 and Nickolaisen et al. 1994 and not from e.g. Trolier et al. 1990, Bloss et al. 2001 etc.? What was the basis for the choice of those values?

The reasons for the choice of krec values used for analysis included in Section 4.4 will be described. Additionally, we replace the notation JPL 2009 with JPL 2011 in case of k_{rec} and K_{eq}, the values of the parameters stay unchanged.

At the end of the 'Conclusions', a short statement considering the implication of our results for modelling ozone loss will be included. However, this will not be elaborated, because the implication of choices of J_{ClOOCl} have been discussed in other papers (Santee et al. 2003, Frieler et al., 2006, von Hobe et al. 2007, Kawa et al. 2009).

In Figure 5, the 'Reaction rate' considers not only the photolysis rate, but also the dissociation rate (green line), therefore we leave the label unchanged.