

***Interactive comment on “Protocol for the development of the Master Chemical Mechanism, MCM v3 (Part A): tropospheric degradation of non-aromatic volatile organic compounds” by S. M. Saunders et al.***

**Anonymous Referee #2**

Received and published: 5 December 2002

This paper describes improvements that have been made to the Master Chemical Mechanism, using work from the literature up to the beginning of 2001. The MCM is a near-explicit chemical mechanism describing the degradation of organic compounds important in tropospheric chemistry and is a very valuable tool for the atmospheric community. The value of such a mechanism can only be maintained if the input data are updated with the literature and so this paper is welcomed. In addition to this paper, there is a companion paper that describes the degradation of aromatic VOCs.

The mechanism has been validated using the oxidation of isoprene and  $\alpha$ -pinene. The results of these validations show that the mechanism works well for the oxidation of

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these two compounds. However, no comparison is made with the performance of the previous versions of the MCM, and so the question as to whether the new version leads to an improved performance is not asked. Calculations of Photochemical Ozone Creation Potentials (POCPs) are compared with previous versions of the MCM, but it is not clear that the new versions are improvements on the old. I would like to see in the paper some critical comments about the performance of the updated MCM compared with the previous versions.

The paper is well written, clearly and fully referenced and free of typographical errors.

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Interactive comment on Atmos. Chem. Phys. Discuss., 2, 1847, 2002.

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