

## ***Interactive comment on “Organic aerosol and global climate modelling: a review” by M. Kanakidou et al.***

**M. Kanakidou et al.**

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We would like to thank Dr. Magda Claeys for taking the time to read carefully and comment on our review paper. We have incorporated all her corrections and most of her suggestions in the revised version as follows:

Section 2.1 - page 5862. The sentence reads now: "There are a number of other types of primary carbonaceous material in the atmosphere such as viruses, bacteria, fungal spores and plant debris (Bauer et al., 2002) that may be relevant because they are effective ice nuclei (see compilation of laboratory data by Diehl and Wurzler, 2004). "

Section 2.2.1 - page 5863. References have been added and discussion has been accordingly modified: "Very recent studies, however, detected the presence of humic

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like substances, glycol aldehyde and hydroxy acetone as well as methyltetrols indicating involvement of isoprene as source for SOA (Jang et al., 2003a; Claeys et al., 2004a,b; Limbeck et al., 2003; Matsunaga et al., 2003). Claeys et al. (2004a) proposed that a small (0.2 %) fraction of all isoprene may be converted into SOA, corresponding to 2 Tg y<sup>-1</sup> emissions. This number deserves revision since shortly after Claeys et al (2004b) suggested that aqueous phase oxidation of isoprene products is a more important source of SOA.”

The following sentence has been added in page 5874, line 16: “Oxidation products of pinenes others than those detected during ozonolysis chamber experiments have been observed in the ambient SOA suggesting that other oxidants and secondary reactions may be involved in oxidized SOA formation (Claeys et al., 2004b; Edney et al., 2003; Kubatova et al., 2002).

In page 5876 line 7, the following sentence has been added: “ Edney et al (2003) and Kubatova et al. (2002) have detected a C8 tricarboxylic acid , an  $\alpha$ -pinene oxidation product, in semi-rural and urban aerosols.”

Section 3.1.4 - Concluding remarks. We consider that “the impact of SO<sub>2</sub> levels on the SOA formed through heterogeneous reactions” is included in the comments on heterogeneous reactions, aerosol chemistry and aqueous phase chemistry. Therefore we did not add a separate point on this topic.

In page 5951, lines 8-9, it is now stated: ‘the ozonolysis reactions are major contributors to SOA formation’ The other points have been mentioned in the discussion of section 3.1 (earlier).

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