

## ***Interactive comment on “Can a global model reproduce observed trends in summertime surface ozone levels?” by S. Koumoutsaris and I. Bey***

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We would like apologise to the reviewers and correct our reply to the comment concerning the anthropogenic emissions used in this study.

2. Ignoring changes in the spatial distribution of emissions (very important for the US);

Unfortunately, at the time this study was done there were only few countries with emission inventories covering our large study period of 15 years (from 1990 to 2005). Whenever it was available, we have implemented the emission inventories in the model, like for example EMEP for Europe and REAS for Asia. In the case of U.S. we have implemented the NEI emission inventory which we applied spatial uniform trends for the

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entire period. Notice that emission inventories are highly uncertain and emission estimates vary considerably depending on the methods used to make those estimates (Parrish 2006). We are aware of this limitation and we discuss extensively in the revised document. In the Eastern US the uniform scaling agrees qualitatively with recent estimates although it produces some local bias as discussed in section 4.2. Emission trends in the Western US for the 1990s are highly uncertain and not well quantified (Parrish 2006). There are however some indications that NO<sub>x</sub> emissions have increased in the western US in the 1990s (but decreased in the 2000s (Kim et al 2009)), which may in part be responsible for the underestimate in the modeled ozone trends.

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