

Interactive comment on “Sensitivity analyses of OH missing sinks over Tokyo metropolitan area in the summer of 2007” by S. Chatani et al.

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We thank Dr. WRS Stockwell for review and encouraging comments. We totally agree your comments.

Secondary species are getting important. Air quality simulations must be used to set strategies how to reduce their concentrations. We think it is not enough to evaluate simulations for major pollutants like O₃ and PM_{2.5} especially when we conduct future prediction. Responses of secondary species to precursor emissions in the real atmosphere may not be the same as those predicted by simulations even if simulations can reproduce current concentrations of O₃ and PM_{2.5} well. OH reactivity is one of indicators of photochemical reactions. We hope it will be utilized for evaluation of simulations to validate in terms of photochemical reactions.

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We usually use condensed chemical mechanisms in simulations but do not pay much attention to their problems. In addition, individual VOC species in the atmosphere have been measured in several studies but implication to condensed chemical mechanisms has been rarely discussed. We regard this study as an important link between the fields of simulations and measurements. This approach is expected to reveal problems in condensed chemical mechanisms. However, specific implication on them has not been obtained yet. That is one of next steps of this study. As Dr. WRS Stockwell mentioned, over predictions of formaldehyde and under predictions of HO loss are one of key issues to be investigated further.

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