

Atmos. Chem. Phys. Discuss., referee comment RC2
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Comment on acp-2021-628

Anonymous Referee #2

Referee comment on "Process-based and Observation-constrained SOA Simulations in China: The Role of Semivolatile and Intermediate-Volatility Organic Compounds and OH Levels" by Ruqian Miao et al., Atmos. Chem. Phys. Discuss.,
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The work improves SOA simulations by both of process-based and observation-constrained schemes. The authors clarify all updates in revised model simulations and highlight an important model modification, namely the addition of nitrous acid sources. The model shows a good correlation with the observations in different regions and seasons, giving confidence that there is value in the technique. The paper not only presents a reasonable way of improving SOA simulations, but also uses it to interpret air quality sources and phenomena in China. The authors then go on to make source analysis and provide insights into haze mitigation. The paper is good that it offers further evidence that the importance of controlling residential emissions in winter in polluted areas in China. Overall, the quality of English is good. As such, I think this MS can be accepted.