

Interactive comment on “Solar geoengineering using solid aerosol in the stratosphere” by D. K. Weisenstein and D. W. Keith

M. J. Tang

mingjintang@gmail.com

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This study is quite novel and interesting for the SRM research community. Congratulations.

In the manuscript it is stated that important reactions on the surface of these solid SRM particles are not studied. May I bring your attention to the laboratory measurements funded by the UK SPICE project? We have investigated the heterogeneous reactions of these SRM particles (mainly TiO₂, but also SiO₂ and other solid particles) with N₂O₅, ClONO₂, and O₃.

The work on N₂O₅ was published recently (Tang et al., 2014a; Tang et al., 2014b), and the effect of heterogeneous reactions of N₂O₅ with TiO₂ particles on stratospheric
C2050

ozone was also assessed using a 3-D global model (Tang et al., 2014a). Our work on ClONO₂ and O₃ will be submitted soon.

Reference:

Tang, M. J., Telford, P. J., Pope, F. D., Rkiouak, L., Abraham, N. L., Archibald, A. T., Braesicke, P., Pyle, J. A., McGregor, J., Watson, I. M., Cox, R. A., and Kalberer, M.: Heterogeneous reaction of N₂O₅ with airborne TiO₂ particles and its implication for stratospheric particle injection, *Atmos. Chem. Phys.*, 14, 6035–6048, 2014a. Tang, M. J., Camp, J. C. J., Rkiouak, L., McGregor, J., Watson, I. M., Cox, R. A., Kalberer, M., Ward, A. D., and Pope, F. D.: Heterogeneous Interaction of SiO₂ with N₂O₅: Aerosol Flow Tube and Single Particle Optical Levitation-Raman Spectroscopy Studies, *J. Phys. Chem. A*, 118, 8817–8827, 2014.

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