We thank Anonymous Referee #3 for the helpful suggestions and comments. Our point by point answers to the comments are presented below. Referee comments are in bold and our replies in body text.

Referee #3 comments:

Some discussion on the altitude of eruption would be nice. Could the impact in a geoingeneered stratosphere be different when emitting at e.g. 16-18km altitude?

We have added:

"It should be noted that the impact after concurrent volcanic eruption and SRM may depend also on the altitude at which sulfur is released. Increasing the injection height increases the lifetime of sulfate (Niemeier and Timmreck 2015). ***If*** *sulfur from the eruption is released at the same altitude where SRM sulfur resides, it might lead to locally to larger sulfur concentration and therefore to larger particles compared to a case when sulfur from the eruption is released below the SRM sulfate layer. Dependent on the geographical location this volcanic sulfur can still reach the SRM layer e.g in the case of tropical eruption with the ascending branch of the Brewer Dobson circulation. However, this happens on much longer time scales""*

The authors should include a reasoning behind using fixed sea surface temperature, and also a short discussion on the expected impact of a fully coupled ocean.

As has been seen also from the results, there is large variation in the results from MPI-ESM and thus ensemble of several simulations is required. In addition, scenarios by coupled model would require a very long spin up period. Simulations by aerosol-climate model are computational heavy and thus coupling aerosol-climate model with ocean model would require long simulation with computational heavy model which is not possible with limited computational resources. Stratospheric sulfur distribution is not strongly influenced by the ocean and aerosol microphysical simulations without ocean model are justified.

All minor comments below have been fixed if not otherwise said

P21843. L6: Consider referring to Sect. 2.2.

References to scenarios is now added:

"All runs are preceded by a two-year spin-up period followed by a five-year simulation period for the baseline scenarios (defined in section 2.2) and a three-year simulation period for the sensitivity scenarios (Appendix B)."

P21845, L20: "...-SALSA simulations" -> "...-SALSA simulations in the stratosphere".

Modified to: *"and then with MPI-ESM using the stratospheric aerosol fields from MAECHAM5-HAM-SALSA simulations"*

P21846, L3: Remove comma after "study".

P21848, L14-16: Remove parentheses.

P21849, L19: "very fast": To my understanding this means much faster than the responses in question. Suggest rephrase.

"very fast" is replaced by "within less than a year"

P21849, L25-28: Skip parentheses and rewrite the latter part ("and therefore effectively scales" -> "scaling well with SRMcont" ? "corresponding well with SRMcont"?).

This is now rewritten as:

"There is a similar increase in the sulfate burden in the first ten months after the eruption in the Volc and SRM Cont scenarios as is seen by comparing the red and purple lines in Figure 2; here the purple dashed line shows the calculated sum of the effects from separate simulations of Volc and SRM. This scales the Volc simulation to the same start level as SRM Cont. After the first ten months the sulfate burden"

P21850, L3: Lower than what?

"than after the eruption in Volc. "

P21850, L16: How is the growth rate of particles? Is it fast/slow, and have you tested how different growth rates will affect the results?

We haven't tested how different growth rates would affect the results. The growth rate is calculated according to a well-established condensation and coagulation equations, and therefore testing other growth rates would require somehow artificially modifying these equations (or alternatively changing the amount of condensable material, i.e. in this case H2SO4 from SO2 injections, which is out of the scope of this study).

P21851, L4: "be restart" -> "be restarted".

P21852, L1-3: "similar to background conditions": This is an unclear sentence, please rewrite. You are discussing Volc vs SRM Volc?

We have changed to:

"*similar to Volc, ---"*

P21855, L1-5: How large is the changes in longwave radiative forcing?

We have added:

"This in turn leads to an overestimation of the longwave radiative forcing (0.7 W/m^2 for SRM) while the shortwave forcing is less affected (-0.2 W/m^2 for SRM)."

P21855, L12: Suggest moving "lead" to after "eruption".

P21855, L19: "than after" -> "than the impact of" ?

P21856, L16: Less evaporation: Do you mean net evaporation? If not, are there perhaps changes in condensation also?

Here we discuss evaporation fluxes at the surface. This is now added to the text.

P21858, L16-17: Unclear sentence. "SRM case" and "as well as the SRM-only case".

Rewritten: *"Interestingly, the sign of the precipitation change was opposite in SRM Volc and SRM Cont than in the Volc and SRM in large parts of the tropical Pacific."*

P21858, L18: Could any of the changes be due to longwave forcing?

Some of changes might be due the changes in the LW radiation, but here LW radiation have relatively small contribution compared to the changes in SW radiation. .

P21860, L11: "are depended" -> "depend" or "are dependent"