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Geoscientific Model Development Discussions

Interactive comment on "MP CBM-Z V1.0: design for a new CBM-Z gas-phase chemical mechanism architecture for next generation processors" *by* Hui Wang et al.

Anonymous Referee #2

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My previous review had some formatting issues where 3 of the lines were truncated, and I'm sorry for any confusion caused. I include these comments below.

General Comments

5. CBM-Z output is plotted for 10 model hours, and within this time the relative error introduced by the optimisations is less than 0.05% (just), as seen in Figure 4 and mentioned throughout the manuscript. However, it is clear that this error is increasing for some species (e.g. H2O2, SO2, and H2SO4 as presented, and possibly others not shown). If these simulations were run for longer than 10 hours, would these errors still be below 0.05%? For confidence in the improvements described I would expect to see

that the errors remain low for the length of a typical CTM simulation, which could be years depending on how the author's CTM is used. If the conditions used are more realistic (see point 4 above) do these errors increase?

Specific Comments and Technical Corrections

P1L19 - I question whether the <0.05% figure is correct (see General Comments)

P6L17 - as I have mentioned in the General Comments, how robust is the error of range <0.05%?

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