Comment on gmd-2021-284

Allan Leal (Referee)

Referee comment on "The PFLOTRAN Reaction Sandbox" by Glenn E. Hammond, Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2021-284-RC2, 2021

This is a well-written paper. Motivations are clear for why a PFLOTRAN Reaction Sandbox is needed, which will ease PFLOTRAN users to define their own reaction rates.

I have several questions related to the mathematical formulation and algorithm detailed in Section 2, but I'll abstain from commenting on them here as they are not relevant to the paper and I could discuss these directly with the author instead.

I have some aesthetic recommendations. The code boxes should be written with monospace fonts. Some syntax highlighting would be beneficial if possible.

Not sure how viable this is, but the author may want to consider users writing their reaction rates in Python in the future. This can be done sufficiently fast if implemented right and allow users to define their reaction rates with a few lines of code.

Overall, I think this is a powerful addition to PFLOTRAN.

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