

Interactive comment on “Application of random forest regression to the calculation of gas-phase chemistry within the GEOS-Chem chemistry model v10” by Christoph A. Keller and Mat J. Evans

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I would like to thank the authors and reviewers/readers of the presented study whilst briefly adding a rationale for why such papers fit within the journal's targeted audience. Studies on optimising the performance of, particularly, chemical mechanism solvers have been presented in various guises over many years. With the emergence of libraries that enabled rapid and agile prototyping of 'new' solutions that fit within the machine learning domain, it is important that the efficacy of a chosen workflow is clear. This is true whether the proposed solution demonstrates an improvement or reduction

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in computational efficiency. Generating a discourse on this body of work is important and GMD now has clear provenance in publishing studies that demonstrate the advantages and disadvantages of alternative methods for model development. Under the ethos of the GMD publication, the code developed and evaluated in this study is available for others to use and I have no doubt this area will continue to grow and would encourage future studies that might offer improved solutions with regards to time-to-solution, using either the same family of algorithms or different methodologies and/or emerging hardware. With this in mind, the present study is now available for continuing this discourse and will no doubt generate much debate that leads to further submissions.

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2018-229>, 2018.

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