

Interactive comment on “A simple metabolic model of glacial-interglacial energy supply to the upper ocean” by J. L. Pelegrí et al.

M. Huber (Editor)

huberm@purdue.edu

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I read this discussion paper with great interest and I must say hope, that by exploiting an analogy with metabolism something new might be learned about glacial-interglacial cycles. Unfortunately, other than making the metabolic proposition I was not able to identify any new insights into the system within this paper. Analogies are fine, and simple model models are fine, as I think we can all agree, but they have to be to some end.

For example, "approximate a cow as a sphere" is a useful oversimplification to estimating its volume.

But, "approximate a cow as an orangutan" is just plain a weird thing to do unless there

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is a compelling reason.

As suggested by the two reviewer comments and the "short comment", the authors have not made it clear what, how, or why they are making the analogy to mammalian physiology. The motivation must lie in explaining some behavior or solving some physical/biological/chemical problem that the more standard approaches do not, otherwise why resort to making a rather far-fetched analogy? I was unable to identify a single testable prediction of the model or that it was able to better match data in a more parsimonious way than standard models. So it is hard to see what this analogy accomplishes, other than obfuscating the physics. The fuzzy and inconsistent use of basic terminology like, energy and metabolism, does not help as several reviewers noted.

The authors are welcome to revise the manuscript and to address reviewer comments, but it seems unlikely to me that a revised manuscript will be successful without a more compelling motivation for the specific framework being developed and without explicit testable predictions that are novel.

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