Dear authors,

I have to bring to your attention again the issue with the σ-IASI code previously raised by the Topical Editor. Unfortunately, I cannot consider your excuse for not publishing it satisfactory, as it is a third-party model out of your control. Ultimately, you decided to use non-free software for your work, which goes against the principles of the scientific method and precludes the replicability and reproducibility of your study.

From your reply to the topical editor, I understand that you have discussed this with the authors of the model. Their reply does not seem too convincing. What prevents the authors of σ-IASI from publishing the code? It would be good to have a reply to this question.

However, what is more problematic is that the web server at the Università degli Studi della Basilicata is not a trustable repository for long-term archival, something necessary in scientific publication. Indeed, the web page of the model is not updated since 2010. If the email address that you provide to get access to σ-IASI becomes suddenly unresponsive, the accessibility to the code and, therefore, the replicability of your work would break. If the authors of σ-IASI do not want to publish the code, at minimum, if they want to use it for "scientific" purposes, they should store it in a suitable repository for scientific research (e.g. Zenodo) and issue a DOI for it, that you, for example, could cite as a user. This repository does not need to be accessible to anyone and, at the same time, would be trustable and citable. This is the bare minimum we need to ask you in this case.

Therefore, please, liaise with the σ-IASI authors to fix this situation, according to the exposed above, and reply to this comment with the new information (link and DOI) for the new repository. Also, modify the Code Availability Section of your manuscript accordingly in any potential reviewed version.

As a personal note, if the σ-IASI developers do not publish their code, I advise you to avoid using it in the future.

Juan A. Añel

Geosci. Model Dev. Executive Editor