

Reviewer 2

This manuscript introduces an online repository for 3-D photographic models, aimed for research and science education, that additionally allows for user interaction and inspection. Thanks to advances in and wider availability of digital capturing techniques, 3-D photographic models are becoming a standard tool in field-related studies. Providing an online community repository is therefore a very useful and timely service. Once used and populated with more content, the platform has the potential to become an integral resource and tool to the wider Geoscience community. The platform's long-term viability, which is key in such a context, is discussed and clarified to the user. The manuscript is written very well and nicely illustrated. Whether the manuscript fits the journal's scope is up to the editor(s), but I highly suggest that Geoscience Communication also publishes manuscripts introducing community tools like this and not only research-based work. I therefore recommend this widely useful work for publication after some minor revision.

Dear Fabio,

Thank you for the time spent in reviewing our manuscript, and for your positive comments and suggestions.

Could it be clarified whether updates (of faulty data) or extensions (with additional related data) are possible at all, and whether those would be traceable by the users (e.g., via versioning)? Similarly, could a dataset be made obsolete, if another, better/newer one is published (to avoid duplication, continued use of outdated data, and save storage space)?

This is a very important point that was not directly addressed in the original manuscript. It is something we have had in mind during conception of V3Geo but have not yet addressed in the technical solution at time of publication. As it stands, V3Geo model entries do not have versioning. We have replaced some of our own early 3D model contributions to reflect improved processing workflows. However, we agree that such changes should be transparent to users. We have DOIs on the roadmap for V3Geo. This would enforce versioning, as model entries with DOIs will not be changeable following publication. We also see that some users will not want (or be ready for) DOIs. In that case a simple history of changes could be added. Creating a new model entry for an updated version is already an option. We have added a sentence to reflect your comment at the end of section 5.3 on publication.

Adding a short, simplified guide for unexperienced readers to the manuscript to explain how a 3-D photographic model is created (starting from standing in front of a sample/outcrop), is not key to the paper, but would, I think, be useful to promote their wider use and give unexperienced field geologists a feeling about whether they could use this tool too, or not.

The first draft of this manuscript actually included an additional appendix on drone-based photogrammetric 3D model acquisition (as one popular but not exclusive method) for creating 3D models. As the manuscript length increased, however, we decided to instead publish the acquisition guidelines as a separate preprint (Howell et al., 2021), which is referred to in the text. We believe it is out of the scope to go into much detail on the acquisition and processing methods themselves, simply because V3Geo is not restricted to one technique. We have added a sentence in the first paragraph of the Introduction with references for interested readers to consult about the two key methods of photogrammetry and laser scanning.

Line 9: Being a geodynamic modeller, reading the title and first sentence, my first impression was the manuscript being about an online repository of physical models of the Earth. I guess other readers

with yet another background might understand it to be about conceptual models. Given that you have a rather wide audience in this journal, maybe it would be worth clarifying the term 'model' early on at the beginning of the abstract, by using a term like "3-D photographic models" or similar?

Thanks for raising this point from a different perspective. Indeed, use of "model" often requires some clarification whenever multidisciplinary themes are present. We have tried to limit the potential for misunderstanding by qualifying the term with "mesh" and "terrain" in the abstract and adding a bracketed definition at the start of the Introduction. In addition, the acquisition techniques photogrammetry and lidar are mentioned very early in both abstract and introduction. "Photographic" is unfortunately not precise enough, because you may have a 3D model that has been collected using e.g. laser scanning where there is no image texture, but still a perfectly valid 3D mesh model...

Lines 30-37: Is the use of 3-D photographic models also bringing down field-work costs in general (by reducing the work force and time in the field)? If so, would that be another very good argument to mention here?

Good point. We hesitate to say that use of virtual 3D models brings down the general fieldwork costs (for the team doing the acquisition it may actually increase it, depending on equipment and size of area chosen). However, facilitating sharing of this dataset, and reuse in research, teaching or the professional community, can be an important optimisation of resource use when sustainability is in focus in society. This was hinted at in the last sentence of the penultimate paragraph of the original manuscript's Introduction, but now expanded to explicitly state this:

"With a common sharing platform, this can avoid repeating acquisition efforts (and associated costs in time and resources) through routine sharing of high quality and reliable models, an important benefit when sustainability is in societal focus."

Lines 50-54: Out of interest: Is that a similar approach to the quadtree used in e.g., Google Earth?

Yes, Google Earth (and many others) use a similar approach for loading terrain/map/image tiles into its viewer. Quadtrees are traditionally associated with 2D or 2.5D data types, while octrees or other spatial segmentation structure are applied to 3D data.

Line 224: Consider clarifying to: „several gigabytes of model data“.

Done