

General Comments

This manuscript describes the availability of a new dataset comprising a compilation of reference burned area data, which can be used for the validation of burned area products. The short description paper outlines the methods used to standardise a number of different datasets into a common format, and a more detailed description on each one. It also gives an overview of why validation is necessary but not always readily available, which provides useful context.

Validation of burned area products is definitely lacking in the field, and this is a welcome contribution to the research area. I think it will be useful for many researchers working on fire and burned area. The methods are well-referenced, and are mostly clearly described, with the exception of a few points as outlined below. The data is readily available via the link provided in the text, and can be accessed immediately after completing a short form. The data appears complete.

We would like to thank you for your positive comments about the contribution of the present work.

Specific comments

Section 2.1 Selection of validation sites: This section comes across as a literature review of different methods, and I'm not sure what is actually being implemented in this paper from reading this section. Can you clarify in the paragraph (e.g. does each dataset use a different method?)

Response: This point was also indicated by the anonymous referee # 1 in his/her specific comment (point 1). We have added an explanation in section 2.1 clarifying this aspect. Please note that table 2 of the reviewed manuscript summarizes the sampling method applied in each dataset.

At the end of the Introduction, the overview of the paper is a bit vague. I think this would benefit from a clearer outline of the structure, and a list of the datasets that are considered in this paper to give a better overview up front.

Response: Thank you, we have mentioned at the end of the introduction the datasets included in BARD and clarify the project where they have been produced and the contents of the manuscript.

Line 220 – only data in June to October is considered for this dataset. This covers the main fire season in this region, but how are the fires outside of the fire season dealt with?

Response: BrFLAS dataset has been removed from the database since it does not follow CEOS cal-val standards. Please, see short comment 6 and response.

Presumably the temporal length of the reference files is such that it covers multi-day burning. It is worth pointing this out in the text explicitly.

Response: Reference data include all the fire perimeters occurred between the two dates of the Landsat images used to generate them. This is a standard practice in BA validation. We have added a comment at the end of the section 2.2. and modified figure 5 to clarify this point.

It would be useful to include some text describing how one might use all these different reference datasets in practise. Should they all be used together, and if so how should the range be accounted for?

Response: Thank you for this relevant question. This question is also related to specific comments (point 2) from the anonymous referee # 1, general comments of referee # 3 and SC3 (point4). Datasets are not supposed to be used together, as they have been obtained from different methods, rather users can choose the datasets that best suits their needs. As suggested by referee # 1, we have added the data necessary to make probability estimates of accuracy for those datasets obtained through stratified random sampling (Tables in Appendix A of the reviewed manuscript).

How were these datasets selected? Are there any other datasets available that are not included here, or are these the only ones available? I suggest including some explanation of this in the text.
Response: Yes, there are other datasets that have been produced by other authors (e.g. Boschetti et al. 2016;2019). We made a general announcement through the GOF-C-GOLD Fire implementation team list of scientists working on BA products and to our network of fire scientist. The resulting database includes files those that the authors were willing to share publicly and met the CEOS cal-val standards.

Are all the datasets related to FireCCI? It seems so from the description of the data via the link, but not in the paper.

Response: Only the datasets with the 'FireCCI' word in its name were produced under the FireCCI project, the rest of the datasets come from others projects. We mention this in the introduction: 'These validation files were compiled from different international projects and years...'. In addition, we have added the project name of each dataset in Table 2.

Most modellers use NetCDF, if it would be nice if this format was considered for future releases.

Response: Thank you, we will keep in mind your suggestion for future releases. We don't usually use the NetCDF format for the reference files, but users interested in such format can easily do the conversion from .shp to .nc with the open tool 'ncl_convert2nc' that can be downloaded from 'https://www.ncl.ucar.edu/Document/Tools/ncl_convert2nc.shtml'.

Technical corrections

References to figures ("Fig.") throughout the text is sometimes with a space and sometimes without

Response: Thank you, we've added a space in those where it was missing

Line 49 – change to "acquired in the year 2000"

Response: Done

Line 182 - "consists of"

Response: Done