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Interactive comment on "A database of global reference sites to support validation of satellite surface albedo datasets (SAVS 1.0)" *by* Alexander Loew et al.

Anonymous Referee #1

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With the recent advent of multidecadal timeseries of satellite-based surface albedo, the availability of appropriate reference data for the dataset validation is a topical issue. Here the authors present a new database which attempts to gather together information about the various in situ measurement networks of surface albedo and to present that information to interested users in a collated and standardized fashion. The effort behind the paper has clearly been substantive and the creation of a publicly available database itself is commendable. While there are some minor issues in the manuscript where the authors should provide some more relevant information and some points of caution to the user/reader, on the whole the paper is well written and does a good job of explaining the idea behind the database. As such, I recommend that the manuscript be approved

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for publication after minor revisions.

General comments on the manuscript:

1. The availability of multiple criteria for site selection is a good thing. However, some of the criteria presented may have weaknesses of their own, which should be mentioned in the manuscript. Specifically, the land cover classification used in the land cover homogeneity test can be uncertain; global hit rates of LU classification for CCI Land cover has been reported as around 75% [Tsendbazar et al., 2015], implying that the results of the land cover test may not always be trustworty. Secondly, NDVI is also not automatically a good proxy, as it does react to vegetation abundance and seasonality, as the authors note, but it does not react well to vegetation structure (understory vs. overstory), which does influence the BRDF behaviour of the validation site area and thus affects the representativeness of the measurements. Some caveat emptor information for the reader is recommended.

2. Similarly, the quality of the in situ measurement data is not equal between all networks. While I do not expect the authors to be capable of providing robust measurement accuracy numbers as a selection criteria – as such data is approximate at best – I do expect the authors to include some general summary of the quality evaluation literature of at least the largest measurement networks included in the database (Aeronet, BELMANIP, BSRN), lest inexperienced readers assume that all data is created equal.

Minor comments: 1. pg 3, line 7: “in particular a geostationary...”

2. pg 3, line 20: “due to the change during the day of the Sun position” - English words, German grammar. Please revise.

3. pg 5, lines 8-11: Some of the text refers to the NDVI data as day-of-year based, some as 8-day means. Which is correct?

4. Although not relating to the manuscript itself, I encourage the authors to keep developing the SAVS database and its web access methods. It took me a while to find

the actual database on the pages, and I would welcome a web interface allowing the user to filter the whole database with the criteria mentioned in the manuscript before downloading only that part of the database matching the given criteria. Of course, direct data access through the search results would be excellent, but probably outside the range of feasibility.

Tsendbazar, N. E., de Bruin, S., Fritz, S., & Herold, M. (2015). Spatial Accuracy Assessment and Integration of Global Land Cover Datasets. Remote Sensing, 7(12), 15804-15821.

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