

Earth Syst. Sci. Data Discuss., referee comment RC2
<https://doi.org/10.5194/essd-2022-61-RC2>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on essd-2022-61

Anonymous Referee #2

Referee comment on "A repository of measured soil freezing characteristic curves: 1921 to 2021" by Élise G. Devoie et al., Earth Syst. Sci. Data Discuss.,
<https://doi.org/10.5194/essd-2022-61-RC2>, 2022

Comments on "A repository of 100+ years of measured soil freezing characteristic curves"
by Devoie et al.

The authors described a repository for some measured soil freezing characteristic data, which are helpful for the community. The current manuscript is too coarse for publication, a lot of information is missing, and the logic is unclear, although it is a data paper. I would like the have the authors add more details to make a complete paper before considering it for publication in ESSD.

The introduction is short, why the SFCC is important for the community. A short paragraph with a soft touch on the soil freeze-thaw model is insufficient. Some background here for the SFCC and its implication for the community is valuable, and the knowledge gaps (or data gaps) should be provided.

The background section does include an example of SFCC, a typical SFCC curve. I suggest it should be included in the dataset section. It can be used as a case study to show what has been done in the current repository. If the authors would like to keep it as it is as a background for the SFCC, I would suggest the authors put out some data from your

current repository and compare them with this figure to show better present the data and confirm the SFCC introduced in the early section of the paper.

If the data contain lat/long for data points. I would say the coverage of the data points is missing. Although some data are extracted from lab experiments, as the soil type is available, it is possible to put those data on a global map for a geographic location.

The size of the dataset, the primary format of the data, storage, and accessibility are missing; if possible, I would like to see a few robust patterns based on the data, but all of them are missing.

It is good to see the R package is included in the repository; the authors should provide more detailed information about the R scripts, the essential functions, and the organization of those functions. Some examples of the analysis should be provided.

Some writing problems stand out and should be addressed. I just listed a few; authors should be more serious about this issue.

Line 23, an example of SFCC

The 100+ years is not appropriate, as you compiled data of >100 years apart; I originally thought you had data for 100 years duration.

Line 155, this package contains the repository. I thought you mentioned your repository contains the R package, but you stated the R packages contain the repository. I guess you meant your R package contains the function to call for the data repository and can directly access the dataset.