

Reply on CC1

Danilo Mello

Community comment on "Weathering intensities in tropical soils evaluated by machine learning, clusterization, and geophysical sensors" by Danilo César de Mello et al., SOIL Discuss., <https://doi.org/10.5194/soil-2022-17-CC2>, 2022

Dear Sarah,

1. The use of geotecnology associated to marching learning is fundamental for the future of pedology, due to increasing the prediction process in great areas. Congratulations!

Thank you for your comment and your congratulations for us related to this manuscript.

2. Which variables do you used to calculate the intemperism index? Are the variables obtained with sensors our in laboratory?

In this work we used the weathering index obtained with laboratory data, as explained in section 2.3. Weathering rates. We then combined this index with data obtained via geophysical sensors (in the field) and satellite (YSI), which correspond to soil attributes generated by different intensities of weathering and, consequently, pedogenesis. Then we de-correlated the variables (Table 3). Subsequently, the PCA was performed using the kmeans method, where clustering indices corresponding to the different weathering indices were generated.

3. I think that would be good if this article will have a section in R&D correlating weathering to mapping soil fertility in this area.

The fertility issue was not addressed, because it was not the focus of this work. In addition, to properly assess soil fertility we would need soil fertility management data (liming and fertilization) by the company working in the area (since it is an agricultural, private area and company data is restricted). Therefore, it will not be possible nor feasible to hold a session on this topic in this work, which does not prevent this from being done in future works (by the way, we thank you for the idea and we will try to incorporate this in another work).

Regards,

