

Interactive comment on “Designing a network of critical zone observatories to explore the living skin of the terrestrial Earth” by Susan L. Brantley et al.

Anonymous Referee #2

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The paper from S.L. Brantley et al. “Designing a network of critical zone observatories to explore the living skin of the terrestrial Earth” is a review of CZ research leading to a suggestion of a design for future studies and research. The structure of the paper is based on eight sections: the first paragraph introduces the concept of the CZ; the second explains the brief history of research funding; the third paragraph explores the CZO networks over the last decades; fourth paragraph enumerates a series of science field involved in the CZO research; fifth paragraph explains the creation of network in the U.S. through research programs; sixth paragraph presents the main roles of the CZO’s in today’s research; seventh paragraph exposes emergent paradigms; finally eighth paragraph concerns authors thoughts on future design for efficient research on

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the CZO. The CZ research is presented in an evolutive approach of broad interest for growing science community. The hindsight of CZ research is within the scope of the journal and should be considered for publication in Earth Surface Dynamics. The article is mostly free of grammatical errors and writing is clear. The paper addresses relevant scientific questions based on numerous bibliographical references and reaches a proposition for a novel concept of scientific interest.

The structure of the paper could however be improved for the reader to better understand the process leading to a design future CZ network. To improve readability, I would suggest better separation between the third and fourth paragraphs. I would suggest the paragraph 3 to explain the first research initiatives and evolution to resulting CZO programs with main research achievements. Paragraph 4 could then explain the limits of those research programs and the potential field to be developed in the future to go beyond the past achievements. The CZO roles presented in paragraph 5 would then be introduced more clearly.

Specific comments: Paragraph 7 mentions briefly the publication of numerous datasets (p.7 l.1) sometimes spanning several decades of measurements. I feel the creation of this repository as well as the website is a very important achievement in the CZO programs and should be highlighted in the text. This repository can also open new opportunities to future research based on those datasets and be a valuable asset for the modeling community and for the communication to the public. In my opinion, the future of the CZO research will also go through this step in order to better understand variability between different locations and relation with anthropogenic or climate change.

P :12, l.24 : Remove the uppercase from “The”

P15, l.6: remove “to be”

Table 2, 3 and 4: Those tables represent valuable achievements of the CZO research but are only briefly described in the captions. They should be a little more explained in the text. Figure 3: The locations of pin points on the map identify CZO in many other

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countries than just the ones from U.S., Germany, France, UK and China. The caption should be completed or the figure should be modified to locate only CZO from those countries.

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