

## ***Interactive comment on “Designing a suite of measurements to understand the critical zone” by S. L. Brantley et al.***

**N. Hovius (Editor)**

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Received and published: 1 December 2015

ESurfD, 3, C362-C367, 2015-11-28

Dear Sue and colleagues,

First, thank you for submitting this unconventional manuscript. It is good to see that ESurf is used to broaden scientific dialogues beyond the traditional confines. The careful thought and strategy invested in the design of new experiments and observatories often remain unreported in ways that help others to shape their rationale. ESurf warmly welcomes your initiative to change this.

We have obtained two thorough and constructive reviews of your manuscript. Both reviewers agree that the manuscript makes a significant and novel contribution, in the  
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unconventional way stressed above, and they advise that it should be considered for publication in ESurf. I am also of this opinion. However, I ask you to carefully address the major comments made by the reviewers. They are:

1) Explain why it was decided to expand the SSHCZO. 2) Explain the benefits of using experimental catchments across scales. 3) Address the links and feedbacks between CZO design and the state and development of models.

Reviewer 2 also urges you to analyse the new geochemical data in the manuscript. I would advise to include only those data needed in the explanation of your CZO expansion strategy, and to focus the writing entirely on this explanation and an exploration of the consequences of your choices. If this requires new data, then a brief analysis of their meaning and significance should be added, but this should not distract from the main aim of your contribution.

Otherwise, I ask you to carefully consider the detailed comments of both reviewers in preparing a revised manuscript, which I hope you will do at the earliest opportunity.

Best wishes,

Niels Hovius (Stand-in AE)

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Interactive comment on Earth Surf. Dynam. Discuss., 3, 1005, 2015.