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Comment

## ***Interactive comment on “Calibration approaches of cosmic-ray neutron sensing for soil moisture measurement in cropped fields” by C. A. Rivera Villarreyes et al.***

**E. Zehe (Editor)**

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Dear Mr. Rivera Villarreye,

I carefully studied the reviewer comments as well as your manuscript. The three reviewers consistently point out serious deficiencies of the manuscript with respect to structure/clearness of the presentation and to technical soundness of the underlying methods. I pretty much agree with their recommendation that the present work needs very major revisions to reach a standard that is acceptable for HESS. I regret to tell you that the present manuscript is far away from such a standard.

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The revised manuscript should in particular:

- Present a clear story line with research questions/hypotheses including a reproducible explanation of the different calibration approaches and employed methods (their pro's and con's);
- Address scale issues/ the incompatibility of the support volumes of point measurements and the Cosmic Neutron Probe and explain how that has been bridged in your approach; any calibration approach needs to be verified in a split sampling;
- Discuss the meaning of a large scale average soil moisture in the light of heterogeneity/ possible trends of soil hydraulic properties within the integration volume and related trends/variability of soil moisture; What does an areal average tell us in this case?
- Provide exhaustive data in particular also on crop phenology and their development within the time period of investigation as well as on other influencing variables

I regret that I cannot tell you anything more positive. I hope you can take the reviewer comments as constructive challenge to improve the manuscript to standard that is considerable for publication in HESS.

Best regards,

Erwin Zehe, handling editor

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 4237, 2013.

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