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.
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

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