



Interactive
Comment

Interactive comment on “Three-dimensional monitoring of soil water content in a maize field using electrical resistivity tomography” by L. Beff et al.

Anonymous Referee #2

Received and published: 3 December 2012

The paper presents a thorough description of a detailed field experiment to compare TDR and ERT measurements of soil water content in a maize field in Belgium. The main conclusions are that both techniques give comparable results and, when used in combination, provide insight in both the spatial and temporal variation of soil water content. The experiment shows that temporal and spatial distribution of SWC is dominated by the position of plants and only to a minor extent by precipitation events and soil horizons.

I agree with the majority of comments of anonymous reviewer #1 and am also of the

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opinion that this paper is a highly relevant contribution to Hydrology and Earth System Sciences.

I limit my comments to the following minor comments:

- Although generally well written, the paper would benefit from a grammatical review by a native speaker. I would suggest to avoid the first person in the text (we studied, our interpolation method,...) in favour of the passive (The interpolation method used..., The SWC was averaged...,) Replace 'precipitations' throughout the text with 'precipitation'
- p8541 I7-8: A low RMSE does not prove that the equation is correct, it is an indication that the equation can be used in the study. I therefore suggest to rephrase: 'A root mean squared error (rmse) of 0.0204cm³/cm³ between observed and simulated SWC indicates that equation 1 is suited for this study area.'
- all figures: add legend to plot rather than description in caption
- Figure 4: suggest to split into three subplot as the current plot is very cluttered and hard to read
- Figure 5: add the drainage and discuss its contribution to the total water balance in the manuscript
- Figure 7&8: Figure 7 and 8 present the same data, where Figure 8 is more insightful as it presents a more complete picture of the temporal and spatial variation in the data that allows a more objective comparison of both techniques. I would suggest deleting Figure 7 from the manuscript.
- Figure 9: Although it is an impressive graphic, it does not add much to the interpretation of the data or the visualisation of the spatial variability. I recommend to replace with or add a number of 2d vertical and horizontal cross sections. This would make the interpretation of figure 10 easier as well.
- Figure 11: Label the subplots with DOY

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