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Interactive comment on "Improving Calibration and Validation of Cosmic-Ray Neutron Sensors in the Light of Spatial Sensitivity – Theory and Evidence" *by* Martin Schrön et al.

Anonymous Referee #3

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Review of HESS-2017-148

General Comments

The manuscript is thorough and in general clearly presented. The work is original and of high quality. The paper adds extremely valuable and practical information on the calibration and interpretation of the CRNS technique. This work will improve overall understanding and result in more accurate soil moisture products derived from the CRNS –through recalibration of existing datasets as well as improved sampling strategies for new sites or repeat calibrations. Improved data will enhance the hydrological interpretation and application of these data. The inclusion of code for weighting functions is particularly welcome. Sound conclusions are reached, following appropriate

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Discussion paper

methodology. There are only a few minor corrections suggested below.

Specific Comments

1) P.3, L.2 – delete ‘how’ 2) P.3, L.26 for improved clarity, insert ‘corrected’ before neutron count rate. 3) P.8, L.20-25 I fail to see the ‘regular grid’ in Fig.9 ? 4) P.8, L.20-25 I do not follow the derivation of the sector weighting, and as written, it is mathematically incorrect (does it not give the result of Wr/12Pi ?) 5) P.8 L.24 grid size s is presumably a dimension – is that the length of the side one pixel? 6) P.8, end of L.25, presumably should be Wr/n?

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