

Interactive comment on “Evaluating the suitability of the consumer low-cost Parrot Flower Power soil moisture sensor for scientific environmental applications” by Angelika Xaver et al.

Anonymous Referee #1

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I found the manuscript really interesting and pleasant to read. My major concern regards the calibration of FP sensor (par. 3.1). According to what I understood, the Authors took only one soil sample, divided it in 5 parts, with different degrees of saturation, and proceeded to a comparison between the measures of soil moisture provided by 5 FP sensors and 1 professional sensor. The results of the calibration are depicted in Figure 3. Based on my experience on soil moisture data and measurements provided by professional sensors (TDR in particular) I find this approach particularly risky, in particular because the conditions of soil aggregation (macro pores and other) can strongly change from point to point, also in small scales. I suggest the Authors to elaborate the concept and stress the calibration paragraph, highlighting the need of a

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more complete (in terms of soil samples) comparison between the sensors. Somehow, I have the feeling that the differences reported in Figure 9 could be attributed to what aforementioned. Moreover, I believe the Authors should be more cautious in describing the obtained results in terms of soil moisture also because some errors could have been determined due to the difference in the spatial position between the FP and the professional probes. Indeed the Authors state that "The exact horizontal distance between the FP sensors and the professional probes is unknown...", and that it could be approximately 1 meter. Based on my experience, natural soils (not in laboratories) can present strong differences also in small distances, in particolare concerning the hydraulic conductivity.

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