

Interactive comment on “A remote-control datalogger for large-scale resistivity surveys and robust processing of its signals using a software Lock-In approach” by Frank Oppermann and Thomas Günther

Anonymous Referee #2

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The introduction of the paper is well referenced and topics addressed clearly described.

As a comment : Complementary references may be found in the research domain civil engineering in the field of application of large scale structures monitoring.

Paragraphs dealing with the datalogger are clear.

Anyway, in its actual form it is difficult to evaluate what is the contribution part of authors on such system versus functionalities already proposed with these dataloggers by “Controlord” company.

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Furthermore, it seems that the provider of such system has stopped its activity at the end of 2016, so it should be of interest for the community to suggest alternative solutions.

Finally, synchronization of measurements seems addressed just by periodic adjustment of datalogger clock thanks to GPS PPS. What is the time synchronization drift observed between datalogger and which accuracy is required for ERT measurements.

About the 3 post-processing approaches comparative study (FFT, Stacking and Lock-in), methodology and results obtained are clearly described and discussed.

In figure 9 RMS signal evolution analysis could be more commented versus DC and VPP for few parts that present some particular gap with global evolution of VPP and DC.

Did authors have addressed effect of time lag between synthetic data in their analysis? If yes is it integrated in the noise model used or will it be addressed in future works?

For the field experiments, how many measurements repetition were made?

The conclusion is clear and perspective about CSEM should be moderate by the difficulty of time synchronization between dataloggers when high frequency analysis is required.

Remark : Page 9, line 289 and 290 authors use “grey” comment in the text but figure 15 is in color.

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