

# ***Interactive comment on “A comprehensive data quality evaluation method for the current of marine controlled-source electromagnetic transmitter based on Analytic Hierarchy Process”***

**by Rui Yang et al.**

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The article presents a methodology to quantitatively evaluate measured current in marine CSEM. Despite the quality of the results which seem promising, I have comments to make on the contents and the technical approach layout in this article. These should be addressed properly in order to publish it.

1- I know English is not the first language of the authors but I may suggest writing your article in the following tenses: \*\*) As the subject of your sentence is mostly about the

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study you have carried out, then you should use the present tense. \*\*) Your conclusion and interpretation of the results should be written ONLY in the present tense.

Abstract: The first 4 lines should be removed. They don't give any new information that we don't know. I suggest starting with something like: "We present a QC methodology ....". After "...within 2%.", I suggest starting with "The key findings are that ....".

Introduction: There are typos errors that I can't go through each of them unfortunately. Please read it again! After, "Mittet et al., 2008". You stated that "there is no....". Are you sure about this affirmation? To make your point clear, I suggest starting the sentence with the name of the authors you are citing: for example – Edward, 2005 states that ....

Transmitting current analysis "The MCSEM operation data processing ...", this sentence does not make sense. Can you please re-write it? Do you mean that the transmitting current quality influences the inversion?

Evaluation algorithm: Okay

Frequency stability: Please clarify what frequency you evaluate in a... is it the fundamental or the harmonic?

Positive and negative amplitude: Can you please clarify how you obtain  $b_1 = 0.001??$  Also, it should be  $b_0$ ? Same for  $c_1$

Ideal waveform difference: In the first sentence, what do you mean by "single square wave frequency"? Did you mean: "fixed period"? Also, the computation of  $d_i$  is a little problematic... it will always average to 0. Or am I wrong? What if the noise is correlated? I will suggest to compute the square roots of the output instead. The same observation goes to equation (6). Waveform repetition: I guess  $b$  is the number of samples per period or? Please clarify.

Evaluation algorithm and comprehensive index: okay

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Conclusion You should explain the ideal waveform your methodology works effectively and suggest the error one can have using other types of waveforms. Also, during the field trial, what device have you used to measure the current? How accurate is it?

Thanks very much for your contribution. I look forward to reading your feedback.

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