



## ***Interactive comment on “A critical discussion of the electromagnetic radiation (EMR) method to determine stress orientations within the crust” by M. Krumbholz et al.***

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Dear Daniel Köhn, we thank you for your review and your suggestions. Below, we try to answer your questions and reply to your comments.

1. Your main concerns about the manuscript are that the discussion is not open enough and that we are not careful enough with our own words.

One of the reasons why we decided to submit our work to Solid Earth is that this journal provides an open discussion of submitted manuscripts. Consequently, former users of the method get the opportunity to participate in the discussion. Additionally, colleagues who do not agree with our statements still have the opportunity to publish

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a comment. We would, however, like to state here that the distributor was informed about the problems by the first author of this manuscript in summer 2009. Back then the correspondence included all necessary information to reproduce our results. Moreover, in winter 2010 the authors had a meeting in Göttingen (Germany) to discuss our concerns about the Cerescope, to which we invited Reuther, Obermeyer, and Greiling. However, they didn't take part.

We are convinced that we did our duty to inform the distributor and some users. We offered a meeting and we provided the distributor, who is closely cooperating with Greiling, Mallik and Lichtenberger, all necessary information about our research results. That's also why we think that the use of the word “neglecting” is appropriate. However, we will change the sentence “These facts are continuously neglected” on page 1008, line 16 to “These facts are continuously neglected by Greiling and the distributor”. That this is the case is obvious from their reply to a comment on their publication at the Journal of the Indian Geological Society in 2010 (Krumbholz, 2010b; Greiling and Obermeyer, 2010b; see manuscript reference list). But for all that, the Cerescope is still up for sale and there are also new applications for funding which can be found in the internet.

2. You ask what we mean on page 1009, line 11, where we write about “Wrong assumptions regarding the interpretation of the receiving pattern of the antenna” by some previous authors.

On page 1009, line 11, we discuss the results of Lichtenberger (2005, 2006a,b), who expected the antenna to be most sensitive towards its tip. However, this assumption is wrong, as we discuss in the manuscript (page 1006). We explained the receiving pattern of ferrite-core antennas as used by the Cerescope on page 1006, lines 12 to 18, and mentioned on page 1006, lines 8 to 11, that some authors expected the antenna to be most sensitive towards its tip. In this case, the long axis of the antenna is oriented parallel to the propagation direction of the electromagnetic field. But ferrite-core antennas are most sensitive when the long axis is oriented parallel to the magnetic

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flux lines and perpendicular to their propagation direction, respectively.

3. You suggest for the future to test the Cerescope in the laboratory.

The Cerescope is a device designed for use in the field. Besides, tests in the laboratory are not the aim of our manuscript.

However, the problems of potential laboratory tests are: (1) the user has no access to the raw data, so a detailed evaluation is not possible and (2) the short measuring period is only 100 ms per one second, which doesn't allow a continuous recording of the incoming signals, i.e. it is most likely to miss crack-induced signals. For this reason, we advise against further tests of the Cerescope in the laboratory.

4. You ask for a modification of the last sentence and for an outlook of the method, respectively.

We agree, we should end with some suggestions about how the method could be made applicable in the future. We agree also, that in the final sentence (page 1011, line 8 to 10) it is not clear that we write about the method itself, for which it would be desirable to develop it further, and not about the Cerescope which is obviously not applicable.

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Interactive comment on Solid Earth Discuss., 4, 993, 2012.