

Interactive comment on “Drilling cores on the sea floor with the remote-controlled sea-floor drilling rig MeBo” by T. Freudenthal and G. Wefer

Anonymous Referee #2

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General comments

The manuscript describes a remotely operated drilling rig. The topic is of interest to the readers of GI. Some revisions and additions are, in my opinion, needed.

If we consider the drilling rig an engineering challenge, there are many details that, in my opinion, would justify adding a few sentences and supporting figures or tables.

1) In particular, I did not find a summary table for key specification and capabilities of the MeBo system. Perhaps, table 1 could be extended? Maybe there could also be either a figure or another table describing the contents of the six containers, too, in order to clarify the big picture.

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2) What are the requirements for the vessel from which MeBo is operated?

3) Are there particular benefits (time, schedule, quality) that would justify using MeBo instead of other systems even if actual operating costs are comparable?

4) What is the need of servicing the unit while at seas? What limits the actual drilling time at seas?

Some more detailed comments:

5) The abstract, in my opinion, is written in a way that successfully hides several key results presented in the manuscript. In my opinion, one should start with the main result (development of the first remote-controlled deep sea rig using wireline coring technique for sampling the sea floor up to depths of about 80m). As this is mostly about engineering, one could then state the benefits over existing design and conclude with the scientific questions driving the development of the rig.

6) Page 351, line 16: "The ROV is used for navigation, data transfer and energy supply". Please clarify the use for energy supply – this is not obvious unless one refers to the cable between the vessel and the ROV.

7) Page 352, line 4, ".. uses reliable technology..". Perhaps the word "proven" would be a better alternative for "reliable".

8) Page 352, line 5, on the use of the word "specifications": the list actually comprises requirements for the system. The specifications of MeBo need to meet or be better than the requirements. Example, the requirement states that the drilling depth should be at least 50m and the MeBo specification claim 80m capability.

9) Page 353, line 3, "the Mebo is about 6.6m tall": if you are using the ISO-standard 20-ft container (20' x 8' x 8'6" = 6.1 x 2.4 x 2.6m) containers, how do you actually fit the MeBo in the container? Is assembly required at seas? Or is this carried out after transport to the vessel and the rig is put together before departing?

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10) For the benefit of readers more used to SI, please add the dimensions of the 20-ft container in metres.

11) Page 356, line 3, "geophysical properties": could you list what properties you are currently capable of measuring and what you plan to be able (and why) please?

12) Page 358, line 6: should this be "..lifting the 10-ton drill rig.."?

Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., 3, 347, 2013.