

## ***Interactive comment on “Simple, affordable and sustainable borehole observatories for complex monitoring objectives” by A. Kopf et al.***

**Anonymous Referee #1**

Received and published: 21 January 2015

In this manuscript, the authors describe new technology developed specifically for the German MeBo seafloor drilling system. Technology to deploy long-term pressure-monitoring technology at much more affordable costs are presented and compared to the "standard" drilling CORKS used and deployed through the Ocean Drilling and Integrated Ocean Drilling Programs (ODP and IODP). Technical details of instrumentation are shown and adequately described. Few data examples exist to date but some data snippets are presented. Due to the nature of short time records available to the authors to date, no full scientific interpretation and evaluation of these data can be made (yet). However, this paper is focused on the feasibility of new technology as an alternate to expensive and (nowadays) almost impossible to deploy IODP-CORK instruments. Therefore, the paper is important and relevant and worth publishing. No

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major issues exist with the manuscript, except those minor editorial comments posted below.

1. Does the paper address relevant scientific questions within the scope of GI? YES
2. Does the paper present novel concepts, ideas, tools, or data? YES
3. Are substantial conclusions reached? ONLY PARTIALLY (SEE BELOW)
4. Are the scientific methods and assumptions valid and clearly outlined? YES
5. Are the results sufficient to support the interpretations and conclusions? YES
6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? Not fully applicable, as MeBo-CORKs are not available to any other scientists currently and thus, no comparisons or re-productions of data can be made.
7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? YES
8. Does the title clearly reflect the contents of the paper? YES
9. Does the abstract provide a concise and complete summary? YES
10. Is the overall presentation well structured and clear? YES
11. Is the language fluent and precise? YES
12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? Not fully applicable, but when used, all units etc. are correctly defined
13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? NO
14. Are the number and quality of references appropriate? YES
15. Is the amount and quality of supplementary material appropriate? YES

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Minor editorial comments on abstract: Should not all abbreviations be properly introduced as in the main text of the manuscript?

CORK = Circulation Obviation Retrofit Kit? MeBo = Meeresboden Bohrgeraet ...

Minor editorial comments on main text: I know abbreviations are useful to simplify text and avoid necessary lengthy sentences. However, with pressure (P) and temperature (T) I feel, the manuscript reads better if those two physical properties are spelled out all the time. This is only my personal preference, but overall the text has so many acronyms and abbreviations that a few less can't hurt.

Section 5 (Discussion/Conclusion/Outlook) would benefit from a bit more text on the actual data examples and conclusions on the data records measured. E.g. How reliable is the system? How do data compare to other available measurements?

Minor editorial comments on Figures:

Figure 7: add a small scale-bar for size of objects shown; Figure 10 would benefit from an update of the axis' titles (larger font, capitalize first letter); Figure 11 would benefit from larger font size of axis' titles;

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Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., 4, 653, 2014.