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Geoscientific Instrumentation Methods and Data Systems Discussions

Interactive comment on "Tri Axial Square Helmholtz Coil system at the Alibag Magnetic Observatory: Upgraded to Magnetic Sensor calibration facility" *by* Prasanna Mahavarkar et al.

Anonymous Referee #2

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I believe the manuscript deserves publication in the journal providing some changes are introduced in it. It is quite a well description of the system for sensor calibration but, I believe some extra information are needed for a complete understanding of the system, which would help the people interested in using the facility.

First of all, I would like to now if the authors have redesigned and/or rebuilt any part of the coils of just made a new electronics.

The authors describe in detail the structure of the coils in section 2. They illustrate the description with figures 3 and 4. In order to make easier to the reader the description of the system, it would be interesting to include some detailed pictures of selected parts

of the coils, probably as insets of figure 4.

The authors claim that the coils are stable under temperature changes but, what about the electronics? Normally, high-resolution electronics is affected by temperature changes - for example, the output of op-app normally has small drifts due to thermal gradientes. Have the authors check the stability of the system against thermal changes, for example, measuring the same fluxgate day and night?

It is mentioned that 3 more sensors were measured. In order to give more information, the curves of these three sensors should be included. In addition, the curve shown in figure 2 - extracted from a reference - should be measured in the real system, to show the uniformity of the magnetic field in the Helmholtz coil system.

Finally, are there other facilities included to calibrate magnetic sensors like angular dependence of the sensitivity or possibilities to control the temperature?

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