

Interactive comment on “A low-cost device for measuring local magnetic anomalies in volcanic terrain” by Bertwin M. de Groot and Lennart V. de Groot

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This reviewer raises a number of valid points that we addressed in the main text as follows:

Ad 1) The temperature coefficients of the parts of the AnomalyMapper are important to consider. We therefore added a paragraph to the discussion (paragraph 6.3) devoted entirely to the thermal behavior of our device. It turns out that only the tilt sensor is (very) susceptible to changes in temperature. We therefore analyzed the thermal behavior of this chip against a superior alternative (the ADXL354) over the course of five days and a temperature range of 17.5 to 35.6 degrees C. We come to the

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conclusion that the superior alternative of the chip should be used for future designs, but that by the drift correction in the data processing we already did (now paragraph 6.4), we can safely use our tilt sensor data.

Ad 2) The GPS indeed needs some time to get a proper satellite fix, but only when starting the device. We continuously read out the GPS sensor so the sensor keeps tracking satellites, and only 1 s is necessary to provide an accurate position of the AnomalyMapper. We added this to the paragraph on the GPS sensor, paragraph 2.1.

Ad 3) For the revision of this manuscript we obtained a proper measurement of the Earth's magnetic field at the location of the measurements using a horizontal surface with a precision of 0.03 degrees and flux gates. We now compare our measurements to this reference value that was obtained one year after the initial measurements. It is important to note that we cannot exclude that some natural or anthropogenic disturbances led to minor changes in the ambient field measured at Fort Hoofddijk in this one year. References to the IGRF in paragraph 6.2 were removed in favor of the actual, measured, reference value.

[Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss.,
https://doi.org/10.5194/gi-2018-44](https://doi.org/10.5194/gi-2018-44), 2018.

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