

Dear referee 1,

Thank you very much for your extremely helpful comments on my paper. I followed your suggestions as follows. Please find my answers in green:

Suggestions for revision or reasons for rejection

(visible to the public if the article is accepted and published)

Review comments on the revised manuscript 10.5194/hgss-2024-2. "History of the Potsdam, Seddin and Niemegek Geomagnetic Observatories - Part 3: Niemegek"

H.-J. Linthe

After the revision the manuscript has improved significantly. Now the readability of the paper has increased a lot. More technical and administrative parts are moved to Appendices. After some minor adjustments, see details below, the article should be ready for publication in HGSS.

Pg. 2, line 21, For completeness, it should be added: (now termed: GFZ - German Research Centre for Geosciences)

I added the present correct name of the GFZ.

After line 26, It is good practice in papers to present at the end of the Introduction a short overview of the sections to follow in the article. That should also appear here. In particular an announcement and justification of the Appendices should be added and a listing of their titles.

I added the titles of the chapters and appendices.

Pg. 7, after line 4, A note should be added here to the short description in Annex I of the absolute measurement approach in those days.

Similarly after line 33, the note to Appendix I about the procedure of modern absolute measurements.

I did as you suggest at the following positions:

- Pg. 7 line 15/16 (was already present in the previous version of the manuscript)
- Pg. 8 line 25/26
- Pg. 11 line 26/27

Pg. 8, line7, Make clear, for witch purpose were the lamps needed, for illuminating the room or for the photographic registration?

I did at Pg. 9 line 1-3

Line 3: Mention the purpose of the quick-run recordings. Probably, it was the interest in magnetic pulsation measurements.

You did not state the page of this. I could not find "quick-run recordings" at pages 8 and 9. Page 9 line 1-3 describes the storm variometer. Its purpose was the visibility of magnetic storms by using a reduced scale value. The recording tracks of "normal" magnetograms exceed the photographic paper and information is lost.

Pg. 9, lines 25ff: What were the special features of these three-component recordings?

Without this knowledge the sentence contains no information for the reader.

I added “paper-economizing” at Pg. 10, line 20 to explain the purpose.

Pg. 13, line 2, The meaning of the sentence " In 1965 a survey of the total intensity..." is not clear, what was the purpose of the survey, what the outcome?

I hope the wording “In 1962 a survey of the total intensity in the absolute house was carried out (Schmidt, 1963) to find out magnetic anomalies. Neglectable anomalies were found.” will explain it sufficiently. I further added the sentence “The new survey confirmed the results of (Schmidt, 1963).” at Pg. 15 line 6/7.

Pg. 17, line 7ff, The description of fluxgate should be improved, e.g.: "The working principle of this instrument is based on the saturation of a transformer core. In this situation primarily odd harmonics of the excitation frequency are produced. When in addition to the alternating excitation field also a DC components of the environmental magnetic field acts on the core, also even harmonic signals appear. By means of suitable electronic circuits these even harmonics are detected and converted into an output voltage proportional to the Earth's magnetic field component in the direction of the sensor core."

Thank you very much for this much better description. I inherited your wording completely.

Lines 11ff, Also for the proton magnetometer it could be improved, e.g.: " It consists of a vessel filled with a proton-rich liquid, a surrounding coil, and electronic control circuits. The coil is used in two modes: In the first one a strong DC current flows through the coil. The induced magnetic field forces the protons in the liquid sample to align their spin axis along the coil field. After switch off of the DC current the protons start to reorient their spin axis towards the ambient magnetic field by performing a precession motion. The resulting precession frequency is proportional to the ambient magnetic field strength. In this phase the coil is used to pick up the proton precession signal and the electronics measures the derived frequency. Best results are achieved when the direction of the applied DC field is approximately perpendicular to the Earth's magnetic field."

Thank you very much for this much better description. I inherited your wording completely.

Lines 21ff, For the optically pumped magnetometers at least some references should be added.

I added 2 references at Pg. 19 line 3/4.

For final publication, the manuscript should be accepted as is.

accepted subject to **technical corrections**.

accepted subject to **minor revisions**.
reconsidered after **major revisions**:
rejected.

Were a revised manuscript to be sent for another round of reviews:

I would be willing to review the revised manuscript.

I would not be willing to review the revised manuscript.

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The revised version reads much better. There is fair scope for English language editing.

Dear referee 2,

Thank you very much for the renewed review of my manuscript. I highly appreciate your judgment on my revised manuscript.