

We sincerely thank you for your thorough and insightful review of our manuscript. We truly appreciate the time and care you devoted to evaluating our work, as well as your many helpful comments, suggestions, and corrections.

Your feedback has helped us to clarify important points and improve the overall quality and precision of the manuscript. Below, we provide detailed responses to each of your specific comments, along with a description of the corresponding changes we have made.

Referee comment 1:

The peer review of data described in the paper is new to the magnetic observatory community and is of such significance it and might be worth emphasising by adding “by peer review” to the title?

Reply:

Thank you for your suggestion. We are seriously considering this suggestion. Although we have not yet decided on the final title, one option we are currently considering is: “INTERMAGNET's peer-reviewed efforts to improve the quality and availability of 1-minute Definitive Data.”

Referee comment 2:

Is there a better word than “delayed” (line 10). The idea is different levels of data scrutiny or quality control; very little for real-time data; ‘some’ for QD and a great deal for DD. “delayed” sounds rather negative as if there’s a problem, perhaps use ‘quality controlled’ instead

Reply:

The word "delayed" was replaced with "post-processed," which seems like a better word in this context.

Referee comment 3:

Definitive Data sets are intended to be final, although, very occasionally, circumstances arise where revisions are justified. It would be worth mentioning this more explicitly, including examples of the circumstances where changes might be warranted.

Reply:

We have added the following clarification in Chapter 4:

Corrections are very rare. However, occasional updates may be applied to both the one-minute average data files and the accompanying auxiliary files. Such corrections may result from, for example, errors discovered in baseline determination, mistakes in metadata (such as incorrect observatory coordinates), or the publication of incorrect annual means in yearmean-type files.

Referee comment 4:

The authors use the word “homogeneity” (Line 190). It would be helpful for them to explain clearly what is meant by this term in the context of the paper.

Reply:

When using the term homogeneity, the authors refer to the consistency and uniformity of geomagnetic field measurements over time. This means that any variations in the data should reflect real changes in the Earth's magnetic field, rather than being caused by measurement errors, changes in equipment, calibration issues, or differences in procedures at individual observatories.

An explanatory sentence will be added at the point where the term homogeneity appears:

“In this context, homogeneity means that variations in the data from the network of observatories should reflect true changes in the Earth's magnetic field, rather than being caused by measurement errors, equipment changes, poor calibration, or inadequate measurement procedures at individual observatories.”

Referee comment 5:

The authors abbreviate Definitive Data as DD, whereas Quasi-Definitive Data is referred to as QD. In the manuscript “DD data” is discussed that would mean Definitive Data data (e.g. Line 15). Should Quasi Definitive Data be abbreviated to QDD? Alternatively in instances where “...QD and DD data...” appear the order should be changed to “...DD and QD data ...” “to remove the duplication of the word ‘data’.

Reply:

The abbreviation QDD suggested by the reviewer is indeed more logical. However, the abbreviation QD is the one commonly used in the geomagnetic community. Introducing a new abbreviation specifically for this article might cause confusion. That said, we truly appreciate the reviewer’s suggestion and will follow their advice by changing the sequence from “DD and QD” to “QD and DD”.

Referee comment 6:

The authors refer to the process of “Call for Data” (Line 99). It would be helpful for the reader to explain briefly what this process is.

Reply:

The following text will be added to Chapter 3:

The "Call for Data" is an annual message sent by INTERMAGNET to observatories after the end of the calendar year. It provides the deadline for submitting Definitive Data, along with key information about data requirements, including the list of mandatory files and where to upload them (usually the Paris GIN FTP server). The message also highlights any changes in data standards or submission procedures compared to the previous year.

Minor Comments and Corrections

1. With an acronym DD it could be better to capitalise Data in “Definitive data”?

“Definitive data” is used throughout the text and the authors should check consistency in their use of “DD” or “Definitive data”.

Reply: has been corrected

2. Line 33: “However, while their ...”

Reply: has been corrected

3. Line 36: Change “Delayed Data” to “Quality controlled ...” as suggested above. It would also make sense to change the order of DD and QD bullet points since QD is available before DD.

Reply: has been corrected

4. Line 40: Is “magnetologist” commonly used? I might substitute “scientists”.

Reply: has been corrected

5. Line 42: Definitive Data is referred to DD, similarly, should Quasi-Definitive Data be referred to as QDD?

Reply: The abbreviation QDD is logical, but no changes for the reasons explained earlier.

Line 69: “Baseline plots analysis...” change to “Analysis of baseline plots ...”

Reply: has been corrected

6. Line 74: “... requirements are outlined ...”

Reply: has been corrected

7. Line 76: “...datasets...”

Reply: changed to “Definitive Data sets”

8. Line 86: “...components and ...”

Reply: has been corrected

9. Line 95: “...benefiting all ...”

Reply: has been corrected

10 Line 100: “...Data Checking Task Team members...”

Reply: has been corrected

11. Line 110: In “IAF format”, spell out the acronym IAF.

Reply: has been corrected

12. Line 111: “...1-minute data series “

Reply: has been corrected

13. Line 111: “... K local magnetic activity index...”

Reply: has been corrected

14. Line 116: “K9- limit for the local magnetic activity index”

Reply: has been corrected

15. Line 121: “K index values”

Reply: The line was removed because K values were mentioned few lines earlier.

16. Line 123: “The file with the BLV extension”

Reply: has been corrected

17. Line 124: ”...and adopted baselines. The Yearmean file contains ...”

Reply: has been corrected

18. Line 129: replace “like” by “such as”.

Reply: has been corrected

19. Line 130: Incorrect spelling of “magnetometer”.

Reply: has been corrected

20. Line 130: “... visually comparing plots of the time ...”

Reply: has been corrected

21. Line 140: “...tools have...”

Reply: has been corrected

22. Line 141: “...converting formats...”

Reply: has been corrected

23. Line 156: “...INTERMAGNET-DKA”

Reply: has been corrected

24. Line 190. “The Data Checking Task Team (DCTT)...”

Reply: After editing the Conclusion, only the abbreviation DCTT was used.