

ON THE PROBLEM OF NOISE IN GEOMAGNETIC OBSERVATORY DATA

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Modern geomagnetic observatory systems have reached considerable high standards in data acquisition and transfer. The increase in data quality is due to improvements in magnetometer design and digitizing systems allowing for fast data sampling, as well as to running independent systems in parallel. But, new standards in quality pose also the question where to set reasonable limits for reliable data, i.e., how to identify noise and errors in the data and how to reject them. Here, we use the term noise for all signals not directly originating from the geomagnetic field. As well, we discuss bias in the data that is due to improper data handling. Noise and bias in the data may cover a broad frequency spectrum and their sources are manifold, e.g., inadequate data sampling and re-sampling, improperly determined transfer functions of the variometer system, electromagnetic effects, stability problems of various kinds, or even ground motions owing to earthquakes.

Geomagnetic noise, magnetometer, earthquakes

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