

SEMI-AUTOMATIC METHOD OF THE MAGNETOMETER BASELINE VALUES MEASUREMENT

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Proton magnetometer and fluxgate DI-meter now are the main instruments for conducting absolute geomagnetic measurements. Values of declination D and inclination I of the magnetic field together with module T are used to calculate absolute values of components. Comparing them with the values of the digital magnetometer, baseline values are determined. The method assumes that magnetic field is constant over the entire observation period. Modern fluxgate DI-meters have analog signal output and by connecting it through ADC to a computer, you can register the values of the components of the magnetic field along the axis of fluxgate magnetometer sensor. Using data of the proton magnetometer and D or I, we can calculate the absolute values of H and Z components every second, and comparing them with magnetometer data, calculate baseline values. The advantage of this approach is the ability to calculate baseline values, which remain constant for any changes of magnetic field, directly. To perform the measurements in this way, two programs were developed. The first program generates a form that resembles a standard form for the absolute observations, in which you need to enter the theodolite readings and also writes the DI-meter data to file. The second program reads DI data, proton and digital magnetometer data and calculates the baseline values. The usage of these programs increases the accuracy of measurements, simplifies the measurement procedure and reduces the requirements to the qualification of the observer.