



## **Calibration and evaluation of SQUID-FTMG data using Hilbert transforms**

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For geophysical prospection of fluid currents in sedimentary basins and their interaction with fault zones an extremely sensitive measurement system based on low temperature SQUIDs (Superconducting Quantum Interference Device) – a full tensor magnetic gradiometer (FTMG) system – will be used. Our system consisting of an array of first-order planar-type SQUID gradiometers achieves an intrinsic gradient sensitivity of better than 20 fT/(m $\sqrt$ Hz). The system is mounted in a non-magnetic towed bird underneath a helicopter and is capable to work in airborne operation which allows for fast mapping of the full tensor of the magnetic gradient tensor compared with ground based measurements and could operate even at very rough terrain.

The aim of the work is to develop a semiautomatic software tool for data quality control, processing of the gradient components and reference magnetometer signals. The method allows conversion of magnetic field and gradient tensor components using Hilbert like transforms. Besides other advantages this allows us to compare magnetic field components measured by calibrated reference magnetometers with those calculated from gradient components by the above mentioned transformations.