Field excercises

-7 vertical electrical sounding goul: strakigraphy (ground water table, saturated zone,...) -7 Topics

- -ractive vs passive method source no source
- -Jarray types
 - Unich one -> less efford infields sensitivities
- -> magnetics good: is there something -> what kind of targets pipes, cables -> measurments
- -> seismic resolve strutigraphy how far away list shot reverse shot I far shot

Origin of magnetic fields= currents (Control Roop -> dipole fied

Earth's magnetic field

·dynamic and temponal variability

south

• mugnetic field influenced by soear magnetic storms ->space weather (->changing about daily timescale)

upwards

- "manpetic Sield = vector field
- · Northern hemisphere -> compass needle downwords

declination -angle vs. geographic north Inclination -> dip angle what is inclination at equator /poles? field strength



Key-Words

Magnetic Dipoles, Magnetic Potential (A), Farfield Approximation, magnetic induction (B), magnetic field strength (H), magentic dipole moment, volume magnetization, magnetic susceptibility, induced magnetization, currents as sources (i.e loop results in dipole field), the Earth's magnetic field, Geodynamo, Declination (D), Inclination (I), Total Field (T), Time Variability (solar winds, core)

Conceptual understanding of magnetic anomalies





Gradiometer

	Anomaly at the pole	
measures the (vertice) Gradient	$\int \frac{\gamma_1}{\gamma_2} = \int 0.030$	0.002
	0.025-	0.000
	0.015 -	Sensor at 4 m Sensor at 5 m
+ you don't need a base station	0.010 -	-0.00
+ more sensitivity to near surface	0.005 -	-0.00
	0.000 -	-20 -15 -10 -5 0 5 10 15 20 Distance (m)