

Jena SQUID System

JESSY DEEP HTS

A SQUID System for Time Domain Electromagnetics



Highly sensitive SQUID magnetometer are used to achieve the outstanding performance of JESSY DEEP.

Are you looking for deep targets?

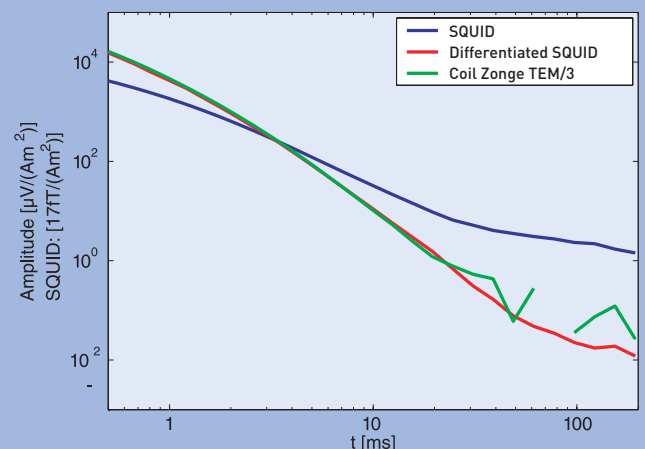
Then you might be interested in JESSY DEEP HTS, a ultra sensitive receiver for ground transient electromagnetic (TEM) measurements.

SUPRACON AG, located in Jena/Germany, has developed an innovative High Temperature SQUID (HTS) system. The SQUID´s unrivalled sensitivity provides the exploration community with data of deep lying targets or ore bodies covered with a conducting overburden that where undetectable before. The exceptionally high dynamic range of JESSY DEEP results in shorter data acquisition times and ultimately more efficient measuring campaigns. The new sensor generation furthermore allows for an operation with smaller sized transmitter loops.

The main parameters of the system are:

| | |
|----------------------------|--|
| Measured Physical Quantity | Vertical B field optional: horizontal B fields (3 channels) |
| Bandwidth | DC ... 10 kHz, flat frequency response |
| Field sensitivity | Better than 50 fT/ $\sqrt{\text{Hz}}$ above 100 Hz 1/f corner < 10Hz |
| Power | Internal battery, 12V / 7Ah, 12 hours operation |
| Output | Symmetric 50 Ohm via banana plugs (± 1 V) Asymmetric BNC (± 10 V) |
| Cryogenics | Liquid Nitrogen, 24 hours refilling interval |
| Total weight | Cryostat including 7.5 kg empty, 9 kg filled with liquid nitrogen, control unit 7 kg |
| System setup | Single button push (or via RS-232 by computer for maintenance) |
| Features | Cable check, analogue signal meter, battery status indicator, nitrogen can, safety equipment |

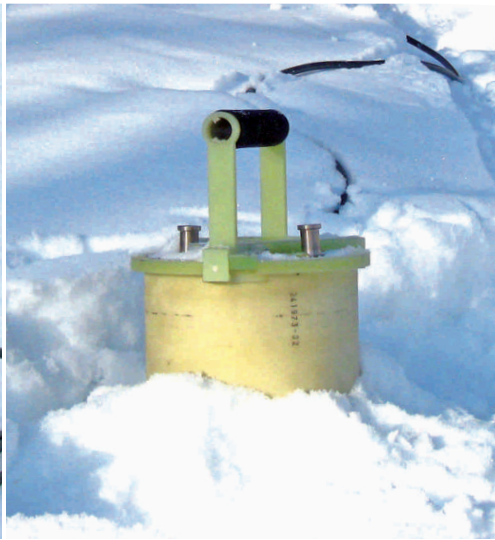
Using SQUIDs in TEM measurements can provide transient data up to 10 times longer, resulting in an increase in depth of investigation by a factor of 3. JESSY DEEP HTS requires less stacking compared to conventional systems, resulting in a significant saving in acquisition time.



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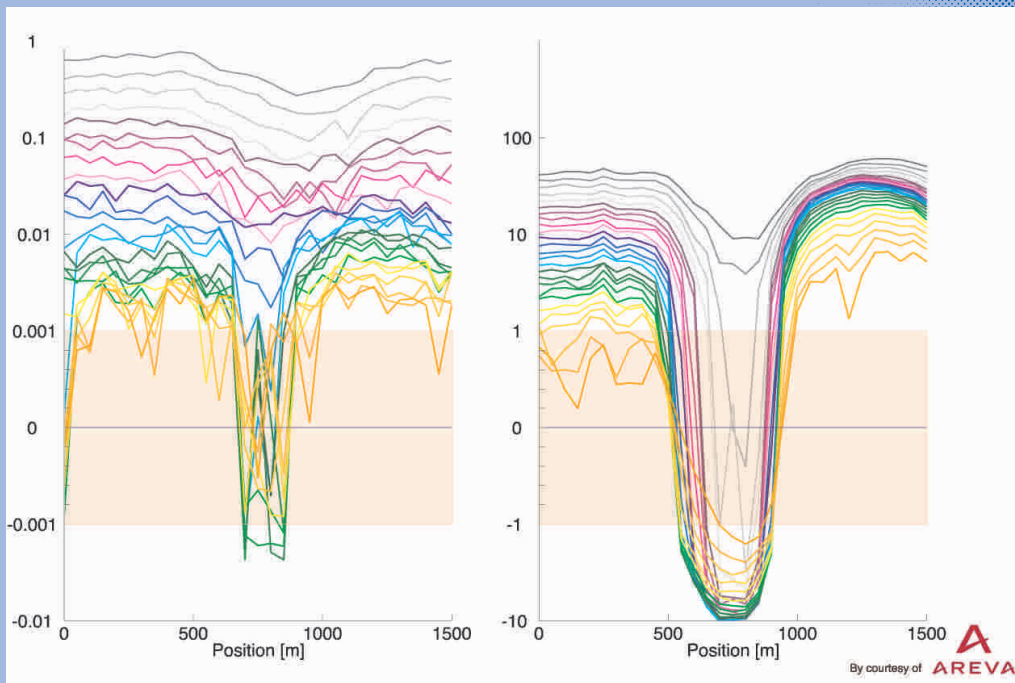
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JESSY DEEP is approved and successfully applied in many exploration campaigns in the world. It is robust and field proof. SQUID EM receivers have in the past led to several findings of major conductors and established the reputation of a highly innovative and powerful electromagnetic tool for geophysics.

State of the art induction coil

JESSY Deep HTS



Measuring the B field directly results in a sharper contrast for conductive ore bodies.

The main advantages compared to induction or air coils are:

- Measuring B field directly results in a sharper contrast for conductive ore bodies.
- High magnetic field resolution at low and ultra low frequencies
- Flat frequency response at low from DC to several 10kHz