Marine Engineering Geology
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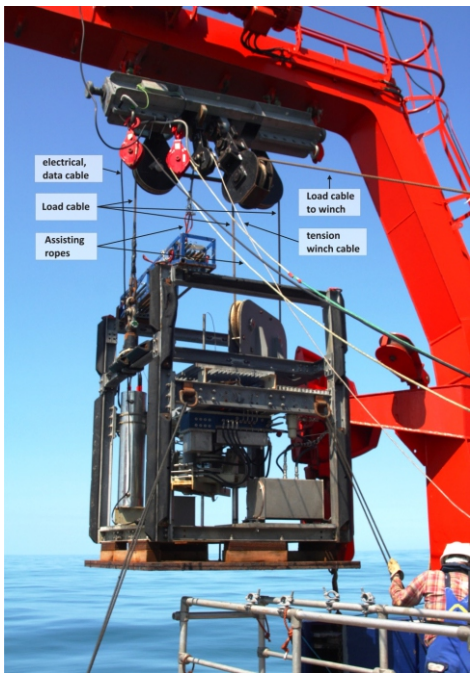
Center for Marine Environmental Sciences

Seabed PCPT "GOST"



GOST in operation, NOR & North Sea

GOST is a modular PCPT offshore geotechnical exploration tool, initially developed by the University Bremen/MARUM, scientifically operated by the Marine Engineering Geology working group. The system has been approved in many commercial and scientific projects worldwide since 2009.

GOST can be operated onshore by ist own supply truck and offshore via A-frame or even single hook type lifting devices.

For shelf operations up to 130 m water depth GOST comes with its own fully heave compensated winches and own mobile power supplies. The general depth rating of the tool itself is 4000 m.

Using ship owned wire and extended electrical supply capacities, GOST can now be operated at water depth of 2000 m.

GOST is a user open system with full access where modes of operation and user requested new sensors/tools can be implemented.

Currently a 24 bit, digital compression cone of 5 cm^2 in conjunction with 23 mm diameter straight rods is in use with real time data transfer and local data storage within the unit as backup.

Data rate (depth resolution) and data sensitivity exceeds competing solutions.

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Technical Specifications

CPT Cone

- Tip cross section: 5 cm²
- Sleeve friction mode: compression
- Sleeve area: 75 cm²
- Max. tip resolution: 30 N or 60 kPa
- Max. tip: 45 kN or 90 MPa
- Max. depth resolution: ~1.5 mm to user defined
- High res. differential pore pressure at u_2 position

Measuring Parameter

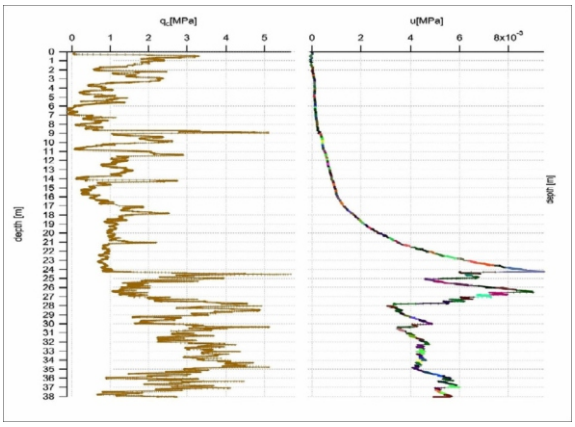
- Tip resistance
- Sleeve friction
- Pore pressure
- Inclination (X,Y,Z - axis) and acceleration (Z-axis)
- Penetration speed
- Temperature... more and other parameters possible upon customer request

Dimensions GOST

- Length: 1.70 m
- Width: 1.70 m
- Height: 2.20 m
- Weight: 2000 - 8000 kg

GOST PCPT cones

GOST in operation, NZ



GOST data example up to 40 m