Discus

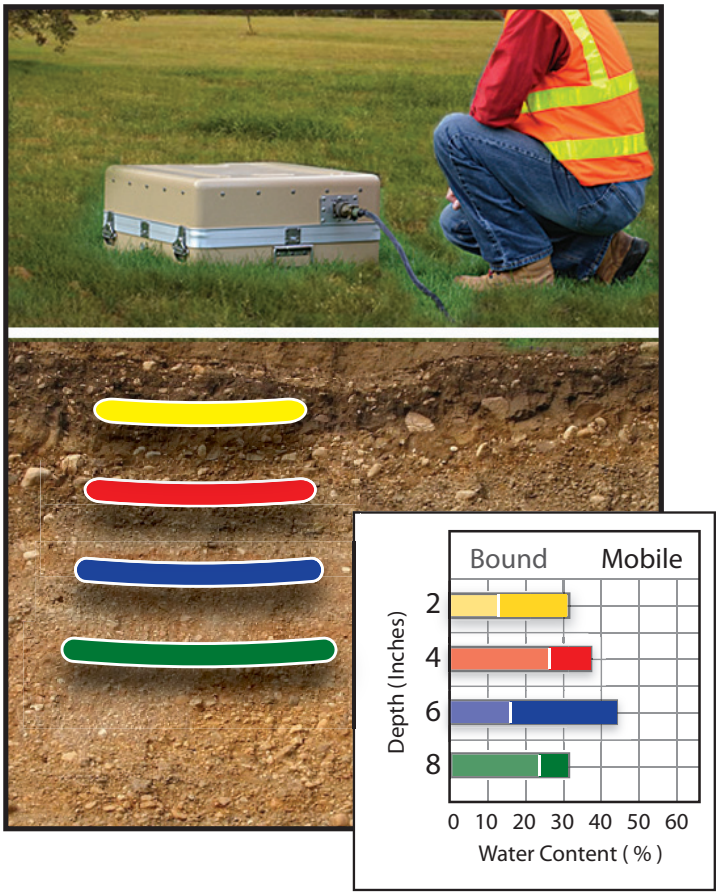
A breakthrough in soil technology, Discus delivers fast and accurate measurements of soil moisture and textural characteristics from the surface, without any need for sample extraction, calibration, or radioactive sources.

Discus Measurements Provide

- Direct and quantitative determination of soil moisture
- Classification of bound versus mobile water fractions
- Estimation of pore size, permeability and field capacity
- Freedom from nuclear sources, borings, and sample collection

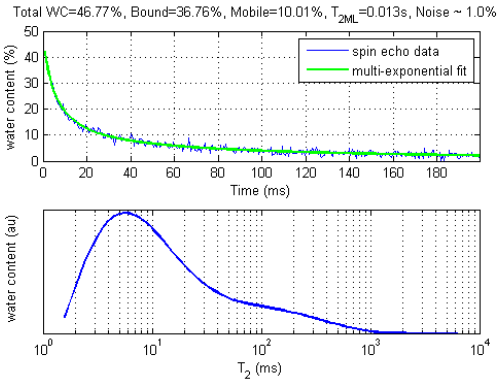
Discus Applications Include

- Geotechnical investigations and road bed compaction analysis
- Agricultural optimization of irrigation and drainage
- Non-destructive testing of concrete and asphalt moisture
- Scientific studies of soil, permafrost, and carbon cycling

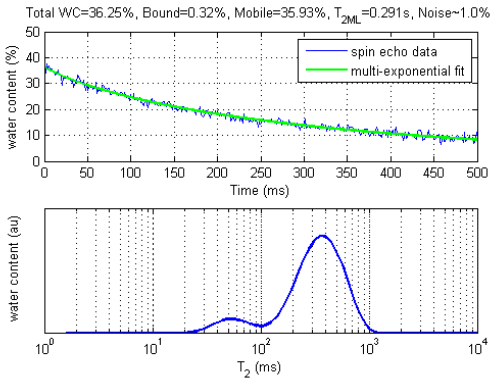


Precise Soil Characterization

Discus provides determination of soil moisture (water content) at discrete depth intervals. The NMR relaxation time distribution also indicates the pore size distribution and soil characteristics.



Measurement of a silty soil indicates short signals and primarily bound water



Measurement of a sandy soil indicates long signals and primarily mobile water

No Lab Analysis

No Radioactive Source

No Calibration

Safe Simple Operation

By eliminating nuclear sources, Discus eliminates the need for costly regulatory compliance and licensing. Easy-to-use software produces clear readouts of moisture content and soil properties.

Direct Water Detection

The NMR signal measured by Discus is emitted directly by hydrogen atoms in water allowing accurate linear determination of water content without any need for lithologic calibrations. Adaptive noise cancellation mitigates cultural noise.

Depth Profiling

High resolution depth profiling based on MRI scanning technology allows the user to quantify variations in soil characteristics as a function of depth in complex heterogeneous environments.

Soil Characterization

Discus data distinguishes water bound in small pores from mobile water in large pores enabling classification of soil type and prediction of dynamic behavior.

Modular Design

The flexible control unit can be used to operate interchangeable sensors including surface scanners with varied sizing and miniature downhole probes.

Specifications

Frequency: 175-475 kHz

Minimum Tau: 300 µs

Depth Range: 3-8.5 inches

Lateral Sensitivity: 20 inches

Communication: USB

Computer: Tablet or PC

Weight: Less than 25 kg

Power: 16V Lithium Ion Battery

** Patents Pending*

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NMR Geophysics

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