

Subject Index

A

Absorption tests, 69
 Acoustic emission, 14
 Acoustic imaging, 14
 Acoustic velocity, 83
 Advanced control techniques,
 276
 Aggregate, specific gravity, 3
 Analog to digital conversion, 203
 Anisotropy, 247
 ASTM standards
 D 422, 69
 D 854, 3
 ASTM Subcommittee D18.95
 survey, automation practices,
 193
 Attenuation function, Rayleigh,
 170
 Automation, 83
 benefits, 300
 experiences, 300
 hydraulic fracture
 experiment, 14
 particle size analysis, 69
 practices, geotechnical testing
 labs, 193
 properties measurement, 83
 specific gravity analysis, 3
 stress-strain-strength soil
 testing, 203
 triaxial apparatus, 231
 Axial strain, 259

B

Bentonite, sand, 29
 Bonding, inter-particle,
 characteristics, 57
 Borehole, spectral analysis of
 surface waves approach,
 137
 Bulk density, 83
 Bulk flow, 3

C

Calibration, 247
 California Bearing Ratio, 300
 Cementation factor, 43
 Clay, 137
 electrical conductivity, 57
 freeze-thaw effects on, 95
 laboratory compacted, 95
 marine clay, 57
 particle size analysis, 69
 platelets examination, 29
 Pleistocene, 57
 soil, spectral analysis of
 surface waves, 137
 Cohesion, 276
 Cohesive-frictional materials,
 290
 Compression testing, 193, 247,
 259, 290, 300
 Compressive loading, 290
 Conductivity
 clay suspension, 57
 electrical, 43, 113
 hydraulic, 95
 Consolidation testing, 193, 300
 Constant mean stress, 247
 Construction induced vibrations,
 measurement, 170
 Control techniques, advanced,
 276
 Core liner, 83
 CT scan, 95
 Cyclic loading, 259

D

Damage, 259
 Deformation, 203
 behavior, cohesive-frictional
 materials, 290
 rock and soil, monitoring, 113
 Density analyzer, envelope, 3
 Dielectric constant, 113
 Dilation, 247, 276
 Direct shear testing, 276
 Dispersion curves, 156

E

Elastic moduli, 247
 Elastic Young's modulus, 259
 Electrical resistivity, 43
 Electromagnetic geophysical technique, 113
 Electro-mechanical hardware developments, 203
 Extensometers, 247

F

Failure shear test, 276
 Finite element forward modeling, 156
 Flow injection analysis, 69
 Formation factor, 43
 Fracture extent, 14
 Freeze-thaw effect on fine-grained soils, 29, 95
 Friction, 276

G

Geophones, three dimensional borehole, 170
 surface, 170
Geotechnical Testing Journal automation practices survey, 193
 Granular soils, cemented, 43

H

Helium pycnometry, 3
 Hydraulic conductivity, 95
 Hydraulic fracture test, 14
 Hydrometer, 69

I

Inflation pressure, 137
 Isotropic stress, 259

L

Lab automation practices benefits, experiences, 300
 survey, 193
 Lambert attenuation, 83

Load/deformation behavior, cohesive-frictional materials, 290
 Logging device, whole-core, 83

M

Magnetic susceptibility, 83
 Medical imaging, 95
 Modeling, 137, 259
 distinct element, 290
 finite element forward, 156
 numerical, 290
 particle, 290
 Moisture, soil, 113
 Mudstone beds, 57

N

Nondestructive testing
 acoustic imaging, 14
 bulk flow, 3
 conductivity/resistivity, 43, 57
 helium pycnometry, 3
 medical imaging, 95
 properties measurement, 83
 scanning electron microscopy, 29
 spectral analysis of surface waves approach, 137, 156
 time-domain reflectometry, 113
 vibration measurement, 170
 X-ray absorption, 69

P

Particle size analysis, 69
 Particle velocity acoustic emission sensors, 14
 Penetrometer, 57
 Pile driving vibrations, 170
 Polyaxial testing, 14
 Pore fluid, 29
 Pore geometry, 43
 Porosity, 3, 43
 Pressure change effects, 247
 Pressure control, 231
 P-wave, 83
 Pycnometry, helium, 3

R

Radial stresses, 137
 Reflectometry, time domain, 113
 Residual strength, 276
 Resonant column, torsional, 137
 Rock, jointed, 276, 290
 Rock salt, 247
 Rock, triaxial compression testing, 247
 Rock zone, disturbed, 156

S

Sand-bentonite, 29
 Sand-cement specimens, 43
 Scanning electron microscopy, 29
 Sedimentary soft rocks, 259
 Sediments, resistivity, 57
 Seismic measurements, 156
 Seismic surface waves, 137
 Servohydraulic test system, 247
 Shear modulus, small strain, 137
 Shear rock testing system, 276
 Shear testing, 193, 276
 direct shear, 300
 large shear box, 300
 Shear wave velocity, 137
 Silt, particle size analysis, 69
 Soft rock, 231
 Soil behavior
 scanning electron microscope
 assessment of, 29
 Soil, fine-grained, freeze-thaw
 effects, 29, 95
 Soil index, 43
 Soil moisture, 113
 Soil properties, whole core
 logging device
 measurements, 83
 Soil resistivity, 57
 Soil sound speed, 83
 Soil, specific gravity, 3
 Soil stiffness, 231
 Soil, stress-strain-strength, 203
 Soil, triaxial testing, 231
 Soil, unsaturated clayey, 137
 Solute concentration, 113
 Sound velocity, 83
 Specific gravity
 aggregate, 3
 apparent, 3
 bulk, 3

Spectral analysis of surface waves
 approach, 137, 156
 Stability monitoring, 113
 Stiffness, 276
 rock, 156
 soft rock, 259
 soil, 231
 Stokes law, 69
 Strain nonlinear features, 259
 Stress, 203
 confining, 156
 constant mean, 247
 path testing, 231
 Stress-state dependency, 259
 Stress state, in situ, 137
 Stress-strain curve, 290
 Stress-strain-strength soil testing,
 automated, 203
 Surface wave velocities, 137, 156

T

Time domain reflectometry, 113
 Torsional resonant column, 137
 Triaxial compression, 247
 Triaxial test, 231, 259, 300

V

Vibration measurement system,
 field, 170
 Virtual instrument, 170
 Voids, 29

W

Water level measurement, 113
 Wave speed, 170
 Wave velocity
 shear, 137
 surface, 137, 156
 Weathering, 57
 Wet soil bulk density, 83

X

X-ray absorption, 69
 X-ray radiography, 95

Y

Young's modulus, 259