

GEOPHYSICS 2003

TECHNICAL AGENDA

<http://www.fhwa.dot.gov/bridge/geophys.htm>

TUESDAY (12/09/03)

SESSION 1: Overview of Geophysical Methods

1. *TRANSITION TO ROUTINE USE OF APPLIED GEOPHYSICS FOR SITE INVESTIGATIONS*: B. Berkovitz
2. *OVERVIEW OF GEOPHYSICAL METHODS*: N. Anderson

SESSION 2: Overview of Geophysical Methods

3. *SELECTION AND SUCCESSFUL APPLICATION OF GEOPHYSICAL METHODS*: R. Benson, L. Yuhr and R. Kaufmann
4. *THE GRAVITY METHOD IN ENVIRONMENTAL AND ENGINEERING APPLICATIONS*: K. Mickus
5. *OVERVIEW OF SEISMIC REFLECTION*: J. Clark
6. *OVERVIEW OF LASER-BASED SENSORS FOR GEOPHYSICAL INVESTIGATIONS*: D. Bloomquist

SESSION 3: Overview of Geophysical Methods

7. *OVERVIEW OF GROUND PENETRATING RADAR*: F. Romero
8. *A WEB SITE FOR THE APPLICATION OF GEOPHYSICAL METHODS TO HIGHWAY RELATED PROBLEMS: AN OVERVIEW OF THE PURPOSE AND A TOUR OF THE NEW FHWA WEB MANUA* ([HTTP://WWW.CFLHD.GOV/AGM/INDEX.HTML](http://www.cflhd.gov/agm/index.html)). M. Martin, E. Wightman, F. Jalinoos, P. Sirles, K. Hanna and K. Haramy

SESSION 4: Specific Engineering Applications

1. *THE SELECTION OF APPROPRIATE GEOPHYSICAL TECHNIQUES: A GENERALIZED PROTOCOL BASED ON ENGINEERING OBJECTIVES AND SITE CHARACTERISTICS*: N. Anderson, A. Ismail and C. Davis
2. *USING S & P WAVE PEAK PARTICLE VELOCITY FOR PREVENTING DAMAGE TO INFRASTRUCTURE*: J. Weigand
3. *DETECTION OF WATER LEAKS USING GPR*: S. Eyuboglu, H. Mahdi and H. Al-Shukri
4. *A NEW SYSTEM TO PERFORM 3D GPR SURVEYS FOR UTILITY MAPPING*: M. Lualdi and L. Zanzi
5. *THE USE OF COMPUTER ASSISTED RADAR TOMOGRAPHY FOR DAMAGE PREVENTION OF UNDERGROUND ASSETS AND AVOIDANCE OF UNDERGROUND HAZARDS*: E. Bergstrom

WEDNESDAY (12/10/03)

SESSION 5: Specific Engineering Applications

6. *BRIDGE SCOUR*: N. Anderson
7. *METHODS TO MEASURE SCOUR DEPTH AND THE DEPTH OF UNKNOWN FOUNDATIONS*: E. Mercado and M. O'Neill
8. *QUALITY ASSURANCE FOR DEEP FOUNDATION ELEMENTS* – E. Kase and T. Ross

SESSION 6: Specific Engineering Applications

9. *NON-DESTRUCTIVE TESTING (NDT) METHODS OF DEEP FOUNDATIONS*: M. Hussein, G. Likins and F. Rausche
10. *LEVERAGING EXISTING INFRASTRUCTURE: USING WHAT'S ALREADY IN THE GROUND*: E. Kase, T. Ross and J. Descour
11. *A BOREHOLE MAGNETIC LOGGING TOOL FOR ESTIMATING UNKNOWN FOUNDATION DEPTHS*: Churl-Hyun Jo, Young Ho Cha and Jai Hoa Choi
12. *TOMOGRAPHIC IMAGING OF CONCRETE STRUCTURES CONTAINING PLANNED DEFECTS*: F. Jalinoos, N. Mekic and K. Hanna

SESSION 7: Specific Engineering Applications

13. *GPR SURVEYS TO HELP DETERMINE CONDITION OF A CONCRETE BRIDGE DECK*: E. Billington
14. *CONTINUOUS ALIGNMENT GEOPHYSICAL EXCEPTION REPORTING FOR FLORIDA ROADWAY PROJECTS: A STUDY IN PROGRESS*: R. Werner, R. McGillivray, D. Horhota and M. Garman
15. *PAVEMENT EVALUATION AND DEVELOPMENT OF SEASONAL AND TEMPERATURE ADJUSTMENT MODELS USING SEISMIC PAVEMENT ANALYZER (SPA)*: N. Gucunski, S. Zaghloul, R. Hadidi, A. Maher and T. Chmiel

SESSION 8: Specific Engineering Applications

16. *EVALUATION OF ASTM TIME DOMAIN REFLECTOMETRY METHOD FOR SOIL WATER CONTENT AND IN-PLACE DENSITY*: N. White, A. Sallam, A. Ashmawy and D. Horhota
17. *DETERMINATION OF 1-D SHEAR WAVE VELOCITIES USING THE REFRACTION MICROTREMOR METHOD*: S. Pullammanappallil, W. Honjas and J. Louie

SESSION 9: Problem Geologic or Environmental Conditions

1. *CAUSES OF SUBSIDENCE & COLLAPSE IN KARST*: R. Benson
2. *GEOPHYSICAL CHOICES FOR KARST INVESTIGATIONS*: R. Hoover and G. Fields

THURSDAY (12/11/03)

SESSION 10: Problem Geologic or Environmental Conditions

3. *SINKHOLE DETECTION IN FLORIDA USING GPR AND CPT*: P. Bullock and A. Dillman
4. *THREE-DIMENSIONAL ELECTRICAL RESISTIVITY SURVEYS TO IDENTIFY BURIED KARST FEATURES AFFECTING ROAD PROJECTS*: K. Garman and S. Purcell
5. *INVESTIGATION OF BRIDGE FOUNDATION SITES IN KARST TERRANE VIA MULTI-ELECTRODE ELECTRICAL RESISTIVITY*: D. Hiltunen and M. Roth

SESSION 11: Problem Geologic or Environmental Conditions

6. *DETECTION OF SHALLOW CAVITIES BY WAVELET TRANSFORM ANALYSIS OF SURFACE WAVES*: P. Shokouhi, N. Gucunski and A. Maher
7. *SUBSURFACE IMAGING OF LAVA TUBES UTILIZING GEOPHYSICAL TECHNIQUES SISKIYOU COUNTY, CALIFORNIA*: T. Meglich, M. Williams, M. Demarco and K. Haramy
8. *HIGH RESOLUTION SEISMIC REFLECTION INVESTIGATION OF SALT DISSOLUTION FEATURES IN KANSAS*: N. Croxton and R. Henthorne
9. *MAPPING CLAYS BENEATH ROADWAYS WITH SUBSURFACE IMAGING*: P. Sirls, J. Pfeiffer and K. Haramy

SESSION 12: Workshops/Demonstrations (Concurrent)

- 11a. *THE SEISOPT® REMI™ V30+™ SYSTEM: USING STANDARD REFRACTION SEISMIC RECORDING EQUIPMENT AND AMBIENT SEISMIC NOISE (“REFRACTION MICRO-TREMORS”) TO DETERMINE 1D SHEAR WAVE PROFILES*: B. Honjas, Optim
- 11b. *DEMONSTRATION OF THE OHMMAPPER TRN CAPACITIVELY-COUPLED RESISTIVITY IMAGING SYSTEM*: Geometrics
- 11c. *GROUND PENETRATING RADAR WORKSHOP*: F. Romero
- 11d. *DEMONSTRATION OF 3D ELECTRIC RESISTIVITY IMAGING*: Michael Garmon & Scott Purcell

SESSION 13: Workshops/Demonstrations (Concurrent)

- 12a. *GEOLOGIC AND HYDROLOGIC SITE CHARACTERIZATION WITH EMPHASIS IN KARST*: R. Benson and L. Yuhr
- 12b. *USE OF GEOPHYSICAL NON-DESTRUCTIVE TEST METHODS IN QUALITY MANAGEMENT OF TRANSPORTATION INFRASTRUCTURE*: S. Nazarian, UTEP and K. Maser

FRIDAY (12/12/03)

SESSION 14: Unique Case Histories

1. *A CASE HISTORY OF A LARGE KARST INVESTIGATION*: L. Yuhr, R. Benson, R. Kaufmann, D. Casto and J. Jennings
2. *BUILDING STONE DETERIORATION; LUXOR, EGYPT*: A. Ismail, A. Sevi, N. Anderson and R. Stephenson
3. *IMPACTS OF CONSTRUCTION VIBRATIONS ON ROCK PINNACLES AND NATURAL BRIDGES, GENERAL HITCHCOCK HIGHWAY, TUCSON, ARIZONA*: K. King and M. DeMarco
4. *BOREHOLE GROUND PENETRATING RADAR SURVEYS OF FRACTURED LIMESTONE*: E. Bergstrom
5. *A DETAILED GEOPHYSICAL SURVEY TO CHARACTERIZE SUBSURFACE FAILURES ON INTERSTATE 40, PENDER COUNTY, NORTH CAROLINA*: C. Mellor, P. Hubbard, T. Douglas and B. Worley
6. *GEOPHYSICAL INVESTIGATION OF THE SOIL UNDERNEATH THE ASPHALTED ROAD SURROUNDING KARNAK TEMPLES IN LUXOR-EGYPT*: A. Ismail and N. Anderson
7. *GEOPHYSICAL CHARACTERIZATION OF SEEPAGE FROM EARTH FILL DAM*: G. Abdel Aal, A. Ismail, N. Anderson and E. Atekwana
8. *GPR STUDY OF IMBEDDED DOWEL BARS, VAN BUREN, MISSOURI*: W. Kim, N. Anderson, A. Buccellato and A. Ismail
9. *NON-LINEAR SOIL RESPONSE TO STRONG GROUND MOTION: DETERMINATIONS BASED ON SASW VELOCITY PROFILES*: S. Kociu, D. Hoffman and N. Anderson
10. *ESTIMATION OF NEAR-SURFACE SHEAR-WAVE VELOCITIES BY SASW METHOD IN SOUTHEAST MISSOURI*: A. Malovichko, D. Malovichko, D. Shylakov, P. Butirin and N. Anderson