



Deep Foundations Dynamic Testing & Analysis Seminar/Workshop

March 4-6, 2024

Lake Nona Wave Hotel, 6100 Wave Hotel Drive
Orlando, FL 32827



MON - MARCH 4

Seminar on Deep Foundation Integrity Testing and Wave Equation Analysis

8:30 am - 5:00 pm

Registration begins at 8:00 am

TENTATIVE AGENDA TOPICS

- Wave Mechanics – Basics
- Non-destructive testing – High & Low Strain
- Non-destructive testing – Crosshole Sonic Logging
- Thermal Integrity Profiling
- Dilled Hole Inspections
- Wave Equation Background & Workshop - Bearing Graph, Inspection Chart, Driveability

TUE & WED- MARCH 5 & 6

High Strain Dynamic Foundation Testing Workshop & Proficiency Test

8:30 am - 5:00 pm

TENTATIVE AGENDA TOPICS

- Wave Mechanics for PDA testers (90 min)
- PDA Testing & Applications – Proper Practices, Codes & Economics
- PDA Workshop: Integrity, Stresses, Energy & Capacity Calculation
- CAPWAP Background, Basic & Advanced Examples
- iCAP® – Instant Signal Matching
- Dynamic Formula – Why It's a Bad Idea
- PDA Data Quality – Examples
- Dynamic Measurement and Analysis Proficiency Test* (Optional)

Dynamic Measurement & Analysis Proficiency Test

At the end of the High Strain Dynamic Testing Workshop participants may take a multiple-choice Dynamic Measurement and Analysis Proficiency Test which will take less than 1-½ hours to complete. The test will cover the theory of Wave Mechanics, Case Method (PDA) equations, data quality assessment, data interpretation and basic CAPWAP analysis. The test is designed for those with experience in using the Pile Driving Analyzer® system and CAPWAP to perform High Strain Dynamic Foundation Tests. The best preparation for the test is work experience following an initial PDA training. The workshop will refresh the participant's theoretical background and be a reminder of some important points. Those taking the test are advised to study "Appendix A" and "Helpful Hints" of the PDA manual, review some of the EXAMPLE data provided with the PDA and read the CAPWAP background material. These materials are supplied with PDA purchases. Those without access to the manuals and examples should please contact softwaresales@pile.com in advance of the test date. For more information about the Proficiency Test website: www.PDAProficiencyTest.com.

A Certificate of Proficiency in High Strain Dynamic Pile Testing will be awarded to those who pass the test. The Level indicated on the Certificate is dependent on the score achieved on the test. Those who do not pass the test will receive full credit of test registration fee to be applied towards retaking the test at the next opportunity.

Please note it will take up to two weeks to receive your exam results

Digital/Hard Copy of Presentation

All training material will be available digitally for download prior to the event. It is suggested that attendees download this material to their laptop and bring their laptop or print the training material and bring their own hard copy.

Certificate of Completion

A Certificate of Completion documenting the number of hours of instruction – Professional Development Hours (PDH's) will be provided. Check with your engineering board of registration for their continuing education requirements.

MONDAY: Seminar on Deep Foundation Integrity Testing and Wave Equation Analysis

Who should attend:

- This seminar is suitable for those new to the field of Foundation Testing and Analysis, and includes an overview of non-destructive testing methods (integrity and load testing) and their applications.
- Geotechnical, structural and construction engineers; owners, contractors and other professionals involved in the design, construction, and specification of deep foundations.
- This seminar is suitable for those needing an understanding of wave equation analysis methods.
- It is suitable also for those specifying the testing to gain basic understanding for assessing the results presented in reports.
- Those attending the Workshop that follows this Seminar are strongly encouraged to attend this review of wave equation background materials.

Learning objectives:

- Select an appropriate method of integrity assessment of deep foundations for a particular application.
- Review reports of integrity and dynamic load testing of deep foundations conducted by others.
- Run a basic wave equation analysis of pile driving.

TUESDAY & WEDNESDAY: High Strain Dynamic Foundation Testing Workshop & Proficiency Test

Who should attend:

- Users of the Pile Driving Analyzer® (PDA) system and CAPWAP® software interested in sharpening their skills.
- Engineers, foundation testing professionals, students, and professors already familiar with the basic concepts of deep foundation dynamic testing and analysis.
- Professionals who desire to have a basic understanding of the dynamic test results being presented to them.
- Those interested in taking the **Dynamic Measurement and Analysis Proficiency Test***

Learning objectives:

- Operate the PDA in a manner conducive to acquiring good quality data.
- Assess pile bearing capacity, pile driving stresses, hammer performance and pile integrity by various methods.
- Avoid pitfalls when analyzing PDA data with the CAPWAP software.
- Interpret PDA testing and CAPWAP software results.
- Describe the soil-model used in CAPWAP and prepare the input needed.
- Review options for CAPWAP analysis and output.
- Calculate bearing capacity and its distribution for driven piles from impact records

INSTRUCTORS



Ryan Allin, P.E., is a senior engineer and Vice President in GRL Engineers and Pile Dynamics. He has a B.S. in Civil Engineering from

Cleveland State University and has achieved Expert level on the PDCA/PDI Dynamic Measurement and Analysis Proficiency Test. After several years performing the entire range of services offered by GRL throughout the United States and in international offshore projects, Ryan is currently responsible for all GRL's educational programs for foundation testing professionals. In that capacity he has lectured on numerous seminars, webinars and workshops on foundation testing and has co-authored papers on the subject. Ryan is a member of the American Society of Civil Engineers and a registered professional engineer in Ohio, Pennsylvania, West Virginia, Delaware, and Kentucky.



Garland Likins, P.E. ret., M.ASCE, is president emeritus of Pile Dynamics, Inc., a manufacturer of quality assurance products for deep foundations. He is a licensed professional

engineer in Ohio and also a former principal of GRL Engineers, Inc., providers of deep foundation testing services. In his more than 45 years since participating in the original dynamic pile testing research at Case Western Reserve University, Garland has performed countless field tests and directed the development of several field-testing products for deep foundations. He is active in ASTM, ADSC, DFI, and PDCA, and serves on many of their active committees.



Michael Morgano, P.E., has been with GRL/PDI since 1985 and most recently was the Branch Manager of the Ohio office of GRL, before transitioning

to a member of the PDI Training and Education Team. He has worked on projects on and off-shore in the United States, Canada, Mexico, Brazil, Africa, and the Persian Gulf. Michael has a B.S. in Civil Engineering from Cleveland State University and a M.S. in Civil Engineering from the University of Akron. He is a registered professional engineer in Ohio, Connecticut, Massachusetts, New Jersey, New York, West Virginia, Kentucky, and Michigan. Michael is a frequent lecturer on foundation testing seminars, workshops, and training events, and has several published papers.