

Registration

Short Course

Dynamic Pile Testing of Driven and Drilled Deep Foundations

Friday, 28 October 2011, 8:30-17:00

Location:

ETH Zurich
Campus Science City (Hönggerberg)
Hörsaal: HIL E 6
Wolfgang-Pauli-Strasse 15, 8093 Zurich

Company

Title

First name

Last name

Address

.....

City

Phone

Email

Date

Signature

I register for the Short Course as a:

- Full Participant CHF 250.--
 Student CHF 100.--

Further information / Location

Further Information / Flyer

IGT Website (Events/Show current/public events):
<http://www.igt.ethz.ch/www/search/CourseDisplay.asp?course=221>; IGT: www.igt.ethz.ch

Registration

All participants must register.
Registration deadline: 17 October 2011:
By email: shortcourse@igt.baug.ethz.ch
By letter or fax (address see below)

Fee

Full participant fee: CHF250.--. The price includes the lecture notes, coffee and lunch at the campus.

Student fee: CHF 100.--, includes coffee and an electronic version of the lecture notes.

Payment

Swiss Post, Post Finance, 3030 Bern, Switzerland
Account-no: 30-1171-7
SWIFT/BIC: POFICHBE, SIC: 9000
IBAN: CH55 0900 0000 3000 1171 7
Reference 1-67572-11, LZ 3474

Arrival in Zurich

Main station to **Campus Science City (Hönggerberg)**:
Tram 11 from *Bahnhofstrasse/HB* to *Bucheggplatz*,
Bus 69 to *ETH Hönggerberg*.
Bahnhof Oerlikon / Bahnhof Altstetten: Bus 80 to
ETH Hönggerberg.

Further information

<http://www.zvv.ch>
<http://www.ethz.ch/about/location/hoengg>

Administration

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ETH

IGT

ETH Zurich, Chair of Geotechnical Engineering

Short Course

Dynamic Pile Testing of Driven and Drilled Deep Foundations

Prof. Dr. Samuel G. Paikowsky
University of Massachusetts and
Geosciences Testing and Research, Inc., USA

Friday, 28 October 2011, 8:30-17:00
ETH Zurich, Campus Science City (Hönggerberg)



Drop Weight
Dynamic Test

Course Description

Dynamic analyses of piles are methods that evaluate pile capacity, integrity and response based on pile behavior during driving. These analyses are established on the principle that a fast load test takes place under each impact for which the pile penetrates the ground. The dynamic analyses are enhanced through data obtained by dynamic measurements while monitoring the pile under impact.

Due to the way drilled deep foundations are being constructed, their structural integrity and geotechnical capacity are highly variable. Drop weight systems are increasingly being used to impact drilled foundations and dynamically test their capacity and integrity.

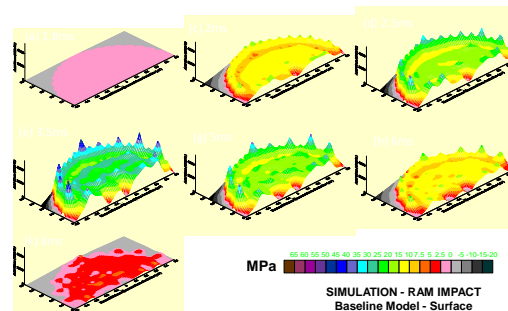
The dynamic measurements and their analyses for driven and drilled foundations have great economic and safety benefits during design and construction. However, appreciating their full potential requires a fundamental understanding of the theories and their original assumptions; hence, they cannot be conducted assuming a 'black box' approach.

The workshop lectures provide a review of the dynamic analyses and testing of deep foundations, addressing principles, testing methods and equipment (including a demonstration) and present case histories. A lecture is being dedicated to the specifics of drilled foundation dynamic testing, as those encounter several difficulties including the need for adequate mass and drop height to reflect the mobilized capacity, test interpretations for irregularly shaped and/or non-uniform shafts, need for reliable dynamic measurements depending on the distance between the impact and the measuring point, and limited knowledge about the accuracy of the predictions.

The reliability of the dynamic methods is discussed via analyses of large databases comparing static and dynamic load tested piles and drilled foundations. The subject is combined with reliability based design approach.

Programme

8:00	Registration
8:30	Introduction Prof. Sarah M. Springman
	Prof. Samuel G. Paikowsky
8:45	Principles – Pile Driving and Dynamic Analyses of Driven and Drilled Deep Foundations
10:15	Break
10:45	Dynamic Pile Testing and Analysis
12:15	Lunch
13:45	Dynamic Testing Limitations and Reliability
14:45	Drop Weight Dynamic Testing on Drilled Deep Foundations
15:45	Break
16:00	International Perspective of Pile Testing, Standards, and Reliability Based Design
17:00	End of lecture



Normal Stress on Conc. Surface, Ram Diameter = 1.0m and Tilt Angle = 0°

Speakers

Prof. Dr. Sarah M. Springman
Chair of Geotechnical Engineering (IGT)
ETH Zurich

Prof. Dr. Samuel G. Paikowsky
University of Massachusetts and
Geosciences Testing and Research, Inc., USA
Guest Professor at IGT, ETH Zurich

Prof. Dr. Samuel Paikowsky is a Professor at the University of Massachusetts-Lowell, where he has resided for over two decades. He is also associated with Geosciences Testing and Research, Inc. (GTR), a consulting company specializing in research, design and testing of Deep Foundations. He has 30 years of experience in geotechnical related engineering projects. He holds a B.S. in Civil Eng. and a MSc. in Geotechnical Engineering from the Technion, Israel Institute of Technology and a Sc.D. in Geotechnical Engineering from the Massachusetts Institute of Technology (MIT). Prof. Dr. Paikowsky is a visiting Professor at the Geotechnical Inst. at ETH Zurich for six months at the invitation of Prof. Dr. Springman.

Paikowsky S.G & Chernauskas L.R. "Dynamic Analysis of Open-Ended Pipe Piles", Keynote Lect., 8th Int. Conf. Application of Stress Wave Theory to Piles, Lisbon, Portugal, 8.-10.9.08. pp. 59-76.

Paikowsky et al. Innovative Load Testing Systems, Final Report for proj. NCHRP 21-08, Transportation Research Board, Washington, DC, Sept. 2004.

Paikowsky, S.G., "Drop Weight Dynamic Testing of Drilled Deep Foundations", Invit. Special Lect., Proc. 7th Int. Conf. Application of Stress Wave Theory to Piles, Kuala Lumpur, Malaysia, Aug. 9-11, 2004, pp. 13-84.

Paikowsky et al., NCHRP Report 507 Load & Resistance Factor Design (LRFD) for Deep Foundations, Nat. Coop. Highway Res. Progr. Rep., Proj. NCHRP 24-17, TRB, Washington, DC, 2004, pp. 134.

Paikowsky S.G., "Load & Resistance Factor Design (LRFD) for Deep Foundations", Keynote lect. Proc. of Foundation Design Codes & Soil Invest. in View of Int. Harmonization & Performance, IWS Kamakura 2002, Tokyo Japan, April 10-12, 2002, pp. 59-94.

Paikowsky, S.G. and Stenersen, K.L., "The Performance of the Dynamic Methods, their Controlling Parameters and Deep Foundation Specifications", Keynote lect. Proc. of the 6th Int. Conf. on the Application of Stress-Wave Theory to Piles, Niyama S. & Beim J. ed., Sept. 11- 13, 2000, São Paulo, BRAZIL, pp. 281-304.