

Special Guest Lecture by:

Christos Vrettos
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Technical University of Kaiserslautern
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Date: Wednesday September 20, 2006
Time: 10:00 to 11:00 AM
Location: Mason Building, Room 298

TOPIC

“Immersed Tunnel Design in Seismic Regions”

BIOGRAPHY

Dipl.-Ing. Civil Engineering, University of Karlsruhe, 1983
Dr.-Ing. Soil Mechanics, University of Karlsruhe, 1988
Dr.-Ing. habil. in Soil Mechanics & Foundation Dynamics, Technical University of Berlin, 1997

Courses: Basic and Advanced Soil Mechanics and Foundation Engineering, Experimental Soil Mechanics, Rock Mechanics, Tunnelling, Soil Dynamics and Geotechnical Earthquake Engineering, Numerical Methods in Geotechnics

Research fields: Geotechnical earthquake engineering, wave propagation in soils, modeling of dynamic soil behavior, dynamic soil-structure interaction, numerical analysis, dynamic laboratory testing, in-situ seismic testing, railroad-track mechanics, deep foundations, mechanical behaviour of unsaturated soils, mechanics of artificially frozen ground.

Design and consultancy: Civil engineering projects dealing with deep excavations, building foundations, piled-raft foundations, vibration protection, rail-road track vibrations, and earthquake resistant design of earth structures, immersed tunnels and deep excavations.

Notable Projects

Beisheim Center, Berlin: Design of the open pit and of the foundations of high-rise buildings; Preveza-Aktion Immersed Tunnel, Greece: Seismic design of the tunnel foundation; Dapong and Chunan Wind Farm, Taiwan: Seismic design of the foundation; Uranium Tailing Dams in Saxony and Thuringia, Germany: Stability against earthquakes; Central Railway Station, Berlin: Foundation design of high-rise buildings; Gas Pipeline, Greece: Stability against slope movements.

Selected Publications

Author of 35 research publications and 20 technical research reports.

Vrettos, C.: Earthquake resistant design of tunnels, *Rational Tunnelling, 2nd Summerschool*, Innsbruck, D. Kolymbas & A. Laudahn (Eds), 261-283 (2005).

Vrettos, C. and Savidis, S.: Seismic design of the foundation of an immersed tube tunnel in liquefiable soil, *Rivista Italiana di Geotecnica*, 38(4), 41-50 (2004).

Vrettos, C.: Vertical and rocking impedances for rigid rectangular foundations on soils with bounded nonhomogeneity. *Earthquake Eng. Struct. Dyn.* 28, 1525-1540 (1999).

Vrettos, C. and Savidis, S.: Shear modulus and damping for Mediterranean clays of medium plasticity. *Proc. 2nd Int. Conf. Earthq. Geotechnical Engineering*, Seco e Pinto (Ed.), 71-76, Balkema, (1999).

Vrettos, C.: Simple inversion procedure for shallow seismic refraction in continuously nonhomogeneous soils. *Soil Dynamics & Earthq. Eng.* 15, 381-186 (1996).

Vrettos, C.: Time-harmonic Boussinesq problem for a continuously nonhomogeneous soil. *Earthquake Eng. Struct. Dyn.* 20, 961-977 (1991).

Vrettos, C.: In-plane vibrations of soil deposits with variable shear modulus: I. Surface waves. *Int. J. Numer. Anal. Methods Geomech.* 14, 209-222 (1990).