

CHRISTOS VRETTOS

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Education and Academic Degrees

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

Expertise

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: Wave propagation in soils, geotechnical earthquake engineering, modelling of soil behavior, soil-structure interaction, numerical analysis, dynamic laboratory and field testing, railroad-track mechanics, deep foundations, unsaturated soils, deep excavations, ground improvement, extraterrestrial soil mechanics, terramechanics.

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.

Employment History

2004-date Professor for Soil Mechanics and Foundation Engineering, Technical University of Kaiserslautern; 2000-2004 Senior Project Manager, GuD Consult GmbH, Berlin; 1998-2000 Project Manager, Philipp Holzmann Planung GmbH, Frankfurt; 1998-2010 Privat-Dozent and later Professor without Regular Chair, Dept. of Civil Engineering, Technical University of Berlin; 1996-1998 Consulting Engineer; 1990-1996 Senior Lecturer, Institute of Geotechnical Engineering, Technical University of Berlin; 1990 Post-Doctoral Fellow, Dept. of Civil Engineering, Massachusetts Institute of Technology; 1989 Post-Doctoral Fellow, Dept. of Civil Engineering, Kyoto University; 1984-1989 Research Associate, Division of Soil Mechanics and Foundation Engineering, University of Karlsruhe.

Notable Projects

Thessaloniki Metro: Design of top-to-down deep excavations for the stations; Stavros Niarchos Foundation Cultural Center, Athens: Design of building foundations and earth structures; Metrolin U55, Berlin; thermal analyses for artificial ground freezing; Beisheim Center, Berlin: Design of the open pit and the high-rise building foundations; Preveza-Aktion Immersed Tunnel: Seismic design of the tunnel foundation; Foundation design for wind farms in seismic regions; Uranium Tailing Dams in Saxony and Thuringia: Stability against earthquakes; Central Railway Station, Berlin: Foundation design of high-rise buildings.

Appointments

Delegate of DIN to Eurocode 7 and Eurocode 8 code drafting committees; member of several DIN-committees on calculation methods in geotechnics, on seismic design of buildings, and on vibration protection; chairman of ETC-12 on the Evaluation of Eurocode 8 of the ISSMGE; head of editorial board of *geotechnik*; regular reviewer of major international journals

Selected Publications

- Vrettos, C., Beskos, D.E., Triantafyllidis, T.: Seismic pressures on rigid cantilever walls retaining elastic continuously non-homogeneous soil: An exact solution, *Soil Dyn. Earthquake Eng.* 82, 142-153 (2016).
Becker, A., Vrettos, C.: Study on erosion stability enhancement of sands using enzymes, *Environ. Geotech.* 2, 301-308 (2015).
Obermayr, M., Vrettos, C., Eberhard, P., Däuwel, T.: A discrete element model and its experimental validation for the prediction of draft forces in cohesive soil, *J. Terramechanics* 53, 93-104 (2014).
Vrettos, C.: Dynamic response of soil deposits to vertical SH waves for different rigidity depth-gradients, *Soil Dyn. Earthquake Eng.* 47, 41-50 (2013).
Vrettos, C., Chen, D., Rizos, D.: Fallstudie zur seismischen Auslegung der Stationen und der Tunnel einer U-Bahnlinie in weichem Boden, *Bautechnik* 90, 333-340 (2013).
Vrettos, C.: Shear strength investigations for a class of extra-terrestrial analogue soils, *J. Geotech. Geoenviron. Eng., ASCE* 138(4), 508-515 (2012).
Vrettos, C., Borchert, K.-M.: Combined foundation of a high-rise building complex on sand: analysis and observation, *Soils and Foundations* 51(2), 343-350 (2011).

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