

MICHAEL J. KAVVADAS

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School of Civil Engineering, National Technical University of Athens (NTUA), Greece

CURRICULUM VITAE (April 2022)

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Google Scholar citations: <https://scholar.google.com/citations?hl=en-US&user=3me9xesAAAAJ>

Scopus : <https://www.scopus.com/authid/detail.uri?authorId=6602075854>

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Languages : Greek (mother tongue), English (excellent), French (good), Italian (fair).

Education :

- 1982 Doctor of Science (ScD) in Geotechnical Engineering. Massachusetts Institute of Technology (MIT), Cambridge, MA. USA.
- 1980 Master of Science (SM) in Geotechnical Engineering. Massachusetts Institute of Technology (MIT), Cambridge, MA. USA.
- 1977 Diploma in Civil Engineering. National Technical University of Athens (NTUA), Greece.

Academic Experience :

- 1977-82 Graduate Research Assistant, Department of Civil Engineering, MIT.
Worked on the constitutive modelling of clays and its applications in the estimation of stress field evolution around driven piles, during installation and subsequent consolidation.
- 1982 Post-Doctoral Associate, Department of Civil Engineering, MIT.
Worked on the above topics in a NOAA funded project titled "Ultimate capacity of offshore friction piles in clays".
- 1987-92 Lecturer, Geotechnical Department, Civil Engineering Faculty, National Technical University of Athens, Greece. Taught undergraduate courses on "Soil Mechanics", and performed research on laboratory testing and numerical modelling of stiff soils.
- 1992-97 Assistant Professor, Geotechnical Department, Civil Engineering Faculty, National Technical University of Athens, Greece. Taught undergraduate courses on "Soil Mechanics" and "Environmental Engineering" and graduate courses on "Environmental Geotechnics" and "Design of Underground Structures". Performed funded research on:
 - (1) Investigation of the mechanical properties of naturally cemented soils.
 - (2) Constitutive modelling of clays with emphasis on repetitive loading and unloading.
 - (3) Design of underground structures.
- 1993 Visiting Assistant Professor, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA.
Worked on constitutive modelling of soils and its Finite Element Implementation.
- 1998 - 2018 : Associate Professor, Geotechnical Department, Civil Engineering Faculty, National Technical University of Athens (NTUA), Greece.
- 2018 - 2021: Professor of Geotechnical Engineering, Civil Engineering Faculty, National Technical University of Athens (NTUA), Greece.

Has taught the following undergraduate courses:

- “Soil Mechanics” (4th semester), in the period 1987-2021
- “Foundation Engineering” (6th semester), in the period 2005-2021
- “Environmental Geotechnics” (9th semester), in the period 1998-2004
- “Computational Geotechnics” (9th semester), in the period 2005-2010
- “Rock Mechanics and Tunnelling” (9th semester), in the period 2011-2019
- “Dam Engineering” (8th semester), in the period 2009-2014

and the following graduate courses:

- “Computational Methods in the Analysis of Underground Structures” in the period 1998-2021
- “Design of Tunnels and Underground Structures” in the period 1998-2018

Has performed funded research in Constitutive Modelling of Structured Soils, Partially Saturated Soils, Soils with Creep and in Weak Rock Tunnelling. Between 2013-2017 he was the Principal Investigator in the FP7 European Research Project “New Technologies for Tunnelling” (NeTTUN)” funded by the European Commission (total budget 10 MEUR – NTUA share 0.5 MEUR).

Has supervised the following PhD theses in the Department of Civil Engineering at NTUA, in topics related to numerical methods – constitutive modelling (6 theses) and tunnels – tunnelling (6 theses):

2007 – Spyropoulos I. “Investigation of the tunnel face conditions in deep tunnels”

2008 – Belokas G. “Modelling the mechanical behaviour of structured anisotropic soils”

2012 – Fortsakis P. “Investigation of the Static Interaction of the surrounding Soil/Rock with the tunnel final lining”.

2012 – Prountzopoulos G. “Investigation of face stability in shallow tunnels”

2014 – Kalos A. “Investigation of the nonlinear time-dependent soil behaviour”

2016 – Bardanis M. “Laboratory and analytical investigation of the mechanical behaviour of unsaturated soils”

2016 – Sitarenios P. “Constitutive modelling of the mechanical behaviour of unsaturated soils”

2017 – Tzivakos K. “Numerical investigation of laterally loaded piles in clayey soils”

2018 – Litsas D. “Investigation of tunneling-induced ground movements in urban environment”

2019 – Efthymiou S. “Laboratory investigation of the mechanical behaviour of clayey soils mixed with Pulverised Fly Ash (PFA)”

2021 – Georgiou D. “Numerical investigation of the tunnel face stability”

2021 – Chortis Ph. “Computational investigation of the interaction between neighboring tunnels”

Professional Experience:

1998 - 2010: Core member of the International Drafting Committee for Eurocode 7 (Geotechnics), which was published in 2004. Co-author of a book on the use of Eurocode (published by ICE – Thomas Telford, London).

2015-18 : Core member of the CEN/EC7 Project Team PT2 for redrafting the Eurocode 7 (Geotechnics).

Extensive geotechnical consulting experience in the following types of projects:

- Marine projects: blockwork quaywalls, piling for jetties, other marine terminals, harbour works, breakwaters and foundation of offshore pipelines in Greece, Saudi Arabia, UAE, Bahrain, Qatar, Oman, Egypt, Cyprus (Vassilikos), Mauritius (St Louis Port), Iraq (Al Faw Port), Kuwait (Boubyan port), Indonesia (Batang powerplant), Morocco (Laayoune, Port Nador).
- Ground Improvement works: Saudi Arabia and UAE (Dynamic compaction and vibro-compaction).
- Deep excavations: Greece, UAE (Dubai pumpstation), Kuwait (dewatering for ring-rodas), Qatar (Doha Metro Stations), Egypt (deep excavation for main sewers), Singapore (Changhi outfall), Saudi Arabia (excavations for pumphouses of power plants), Germany (Munich Central Station)
- Tunnelling: Greece (Athens Metro, several highway and railway tunnels), Qatar (Doha Metro), Italy (Metro C Roma), Albania.

- Dams and other irrigation projects: Greece, East Africa (Rwanda, Kenya, Uganda, Zambia, Ethiopia), Saudi Arabia (Jeddah, Stormwater protection), Cyprus, Armenia
- Landslides: Greece
- Transportation projects: Greece (highway and railway), Kuwait & Saudi Arabia (highway and railway embankments, bridge foundations, ground improvement by dynamic and vibro-compaction).
- Foundations for buildings: mainly in Greece, Saudi Arabia and Cyprus.
- Open cast mining projects: Slope stability, design of exploitation fronts, design of external sterile disposal areas, back-filling and rehabilitation of mines, all related to the lignite mines in NW Greece (operated by the Public Power Corporation - PPC).

Selected list of projects:

1. Marine works (including pile foundations):

- 2000-14 : Geotechnical Consultant of HUTA-HEGERFELD Ltd. Consulted on various marine projects in Saudi Arabia (marine terminals, breakwaters, piling projects), dredging and reclamation projects, flood control embankments in Jeddah.
- 2002-03 : Consultant to ARCHIRODON Construction, for the Foundation of the Main Breakwater at the IDKU LNG Terminal in Egypt.
- 2006: Geotechnical Consultant of ARCHIRODON Construction in the investigation of the ground loss and settlement within the apron area of the Quaywall at Mina Mussafah QW construction in Abu Dhabi, UAE.
- 2012 : Geotechnical Design of a jetty and platform at the Hamriya Port, Sharja UAE for ARCHIRODON Construction Overseas SA.
- 2013 : Geotechnical Consultant of the Contractor HUTA-HEGERFELD for the construction of foundation piles of the Marine Terminal of Jeddah South Steam Power Plant (Saudi Arabia).
- 2014 : Geotechnical Consultant of Hyundai Heavy Industries (HHI) for the design of grouted foundation piles of the Marine Terminal of Jeddah South Steam Power Plant (Saudi Arabia).
- 2014-17 : Consultant to ARCHIRODON Construction, for the foundation of the Eastern Breakwater at the Al Faw Grand Port development in Iraq. The project included foundation of the rubble-mound breakwater on very soft clay.
- 2015-16 : Geotechnical Consultant to the STRABAG – ARCHIRODON JV for the Extension and Strengthening of the Mauritius Container Terminal Quay in St Louis Port, Mauritius. Work included drivability of 60m long tubular piles driven to bedrock.
- 2017: Geotechnical Consultant of ARCHIRODON Construction for the foundation of the new Mina Salman Pier in Bahrain.
- 2017-18: Geotechnical Consultant of ARCHIRODON Construction in the design of the Mooring Dolphin for MIDTAP in Al-Dekheila Port, Alexandria, Egypt.
- 2018-20: Geotechnical Consultant of TRITON Consulting Engineers, for PT BHIMASENA Power Indonesia, in relation to the foundation of the intake and outfall offshore pipelines of the Batang Powerplant in Central Java, Indonesia.
- 2019-22: Geotechnical Consultant of ARCHIRODON NV in the design and construction of the new Phosphate Port at Laayoune, Morocco. The work includes driven pile foundation of the trestle in calcareous formations.
- 2019-21: Geotechnical Consultant of the JV HUTA MARINE - ARCHIRODON NV for the piling at the King Salman Complex for Maritime Industries at Ras Al Khair, Jubail, in Saudi Arabia.
- 2021: Geotechnical Consultant of SGTM-Maroc for the piling of the Port Nador West Med project in Morocco.

2. Ground Improvement:

- 2004: Geotechnical Consultant of ARCHIRODON Construction for the improvement of the hydraulic reclamation fill the Palm Jumeirah Development, in Dubai, UAE.
- 2007-08: Geotechnical Consultant of ARCHIRODON Construction in the Khalifa Port project in Abu Dhabi, UAE. The works included dredging, reclamation and ground improvement by Dynamic Compaction and Vibro-compaction.
- 2012: Geotechnical Consultant of ARCHIRODON Construction, for the Quaywall and Reclamation at the General Cargo & Liquid Terminal at Port of Salalah, Oman. The project included ground improvement of reclaimed fill using dynamic compaction and vibro-compaction.

- 2017-19: Geotechnical Consultant of HUTA Marine Works Ltd, for Ground Improvement by Dynamic Compaction and Vibro-Compaction in the project “Dredging, Reclamation and Marine Facilities at King Salman International Complex for Maritime Industries and Services”, Ras Al Khair, Saudi Arabia.
- 2021: Geotechnical consultant of the Joint Venture (JV) AVAX SA - ETERMAR SA - NV BESIX SA for the preparation of the tender of the Expansion of Pier 6 of the Thessaloniki Port. The work includes construction of Quaywalls, reclamation and ground improvement.
- 2021: Geotechnical Consultant of ARCHIRODON NV for the preparation of the Tender for ground improvement works at the Shurayrah island, as part of the Red Sea Development project along the Red Sea coast of Saudi Arabia.

3. Deep excavations and dewatering:

- 2003-05: Geotechnical Consultant to ARCHIRODON Construction for the Changi Outfall System (part of the Deep Tunnel Sewerage System) in Singapore.
- 2013 : Design of the Excavation and Dewatering system for the Jeddah SWRO III Project – New Seawater Intake Pumphouse, Jeddah, KSA as Consultant to Saudi ARCHIRODON Ltd.
- 2014-16 : Geotechnical Consultant to the Designer (SSF-Germany) for the construction of the Green Line of Doha Metro in Qatar. The project included the design of several cut-and-cover metro stations (excavation and temporary support of 25-30m deep excavations).
- 2018-19: Geotechnical Consultant of ARCHIRODON Construction in the excavation and dewatering of the Terminal Pumpstation (60m deep, 65m diameter) of the Dubai Stormwater discharge system.
- 2018-20: Geotechnical Consultant of HUTA MARINE for the reclamation and ground improvement at the King Salman Complex for Maritime Industries at Ras Al Khair, Jubail, in Saudi Arabia.
- 2019-20: Geotechnical consultant of XZA Architects for the design of the new Cyprus Museum against the risk of flooding due to flooding of the adjacent river. The work included groundwater seepage analyses and design of the peripheral seepage cut-offs.
- 2019-21: Geotechnical consultant of STRYMONAS SA for the deep excavation and dewatering for the construction of a small Hydro-electric plant along Strymonas river.

4. Tunnelling and underground construction:

- Since 1993 : Geotechnical Consultant on tunnelling for several Design Offices : ODOTECHNIKI Ltd, EVPALINOS ATE (design of several tunnels in Greece), ODOMECHANIKI Ltd (design of the highway and railway tunnels at Kakia Skala), DOMH OE (design and construction supervision of a tunnel in Sxisto Attikis) and C.I.SARANTOPOULOS (construction of a tunnel along the Patras bypass highway).
- 1994-2001 : Geotechnical Consultant on tunnelling for ATTIKO METRO AE, the company managing the construction of the Athens Metro project.
- 1999-2004 : Member of the Board of Technical Experts of ERGOSE S.A., the greek public company managing the construction of the new high-speed railway links in Greece. Assignments include several long railway tunnels (up to 9000m long), deep cuts, railway embankments and slides in slopes and cuts.
- 1999 – 2004 : Geotechnical Consultant for the European Commission (DG XVI), on railway tunnelling projects in Greece, funded by the European Cohesion Fund. Work included consulting for the Kallidromo railway tunnel (9000m) and the Othris railway tunnel (6000m).
- 2002-04 : Geotechnical Consultant of the AKTOR - IMPREGILO Joint Venture for the construction of the Extension of the Athens Metro (4000 m long extension of Line 3 to Egaleo).
- 2004-09 : Member of the Board of Geotechnical Experts of EGNATIA ODOS S.A. on the construction of the Egnatia Highway (which includes 86 tunnels and many deep cuts, high embankments and bridges). Work included consultation of about ten tunnels and several deep cuts and slopes.
- 2008-09: Geotechnical Expert for EPTISA Proyectos Internacionales, S.A. (Spain) in the Drafting of the “Technical Specifications for the Design of Tunnels” within the “Albanian Road Design and Construction Standards”.
- 2012-16 : Geotechnical Consultant of the GHEILA-J&P AVAX Joint Venture for the construction of the Extension of the Athens Metro (4000 m long extension of Line 3 to Peiraias).
- 2018-19 Geotechnical Consultant to AKTOR SA for the final lining of the SEP connection tunnel of the Panagopoula Railway tunnel.
- 2018-20: Geotechnical Consultant to AKTOR SA for the cracking of the final lining of the Panagopoula Highway Tunnel
- 2021-22: Geotechnical consultant of TERNA SA for the investigation of the roof collapses of the T2 (Othrys) tunnel on the E65 Motorway.

5. Dams and embankments:

- Since 1990: Geotechnical Consultant on geotechnical dam engineering, for several government authorities in Greece including EYDAP (monitoring the Mornos dam for the water supply of Athens) and the Ministry of Public Works (design and construction of the Evinos dam to supplement the water supply of Athens), and Design Offices like OTME, KARAVOKYRIS Associates, HYDROEXIGIANTIKH, K. MACHAIRAS, HYDRODOMIKI, HYDROTEC on the design of several embankment dams in Greece.
- 1997 Geotechnical Consultant of the Design Office KARAVOKYRIS ASSOCIATES for the design of two water reservoirs in Samothraki.
- 1997 Geotechnical Consultant of the Design Office OTME CONSULTANTS for the design of the Asterion earth-dam in Achaia.
- 1998 Geotechnical Consultant of the Design Office HYDROEXYGIANTIKI in the design of the Triantafillia earth-dam in Florina.
- 1999 – 2004 : Member of the Board of Geotechnical Experts of the Public Power Corporation (PPC), on the construction of hydroelectric projects (expert in dam engineering) in Greece. Jobs included the review of the design under static and seismic conditions and consulting on various problems during construction and operation of the dams.
- 1999 – 2004 : Geotechnical Consultant of the Public Power Corporation (PPC) on the design of the following earth-dams (for hydro-electric power generation) : Papadia dam in Florina, Ilarion dam in Kozani, Ag. Varvara dam in Verria, Metsovitikos dam in Ioannina. Job included the review of the design under static and seismic conditions and consulting on various problems during construction of the dams.
- 2002-08 : Geotechnical Consultant of the Ministry of Public Works (YPEXWDE) for the construction of Gadoura earth-dam in Rhodes.
- 2004–09 : Geotechnical Consultant of the Ministry of Public Works (YPEXWDE) for the construction of the Aposselemis earth-dam in Heraklion - Crete.
- 2006-09 : Geotechnical Consultant of the Contractor MHXANIKH AE in the construction of the Sykia earth dam in Arta.
- 2007 : Geotechnical Consultant of the Design Office KARAVOKYRIS ASSOCIATES in the design of the Mavromati dam in Fthiotida.
- 2007-09 : Geotechnical Consultant of the Design Office HYDROTEC AE in the design of two dams in Corfu island.
- 2008-10 : Geotechnical Consultant of the Design Office ECOS AE in the design of the Iasmos dam in Rodopi.
- 2009-10 : Geotechnical Consultant of the Design Office KARAVOKYRIS ASSOCIATES in the design of two hard-fill dams in Tersefanos, Cyprus.
- 2009-10 : Geotechnical Consultant of the Design Office ECOS AE in the design of the Petrenia dam in Chalkidiki.
- 2010 : Geotechnical Consultant of the Design Office OK MELETITIKI in the design of two tailings dams for the Hellas Goldmines in Chalkidiki. Performed the dynamic analysis of the dams according to the provisions of Eurocode 8.
- 2011 : Geotechnical Design of two Hardfill dams in Cyprus (Archaggelos, Kammitsi). General Designer : KARAVOKYRIS Associates. The design included static and dynamic analysis of the dams according to the provisions of Eurocode 7 and Eurocode 8.
- 2011 : Geotechnical Design of five Flood Retention dams (rockfill with upstream concrete slab, rockfill with central asphalt core) in Jeddah, Saudi Arabia. Contractor : HUTA-HEGERFELD Ltd, Jeddah, KSA.
- 2013-14 : Geotechnical Design of the Muyanza earthfill dam in Rwanda (project funded by the World Bank, as Consultant to the Design Office Z&A Associates S.A.
- 2014-15 : Geotechnical Design of the Warufu earthfill dam in Rwanda (project funded by the World Bank, as Consultant to the Design Office G. Karavokyris & Partners Ltd.
- 2015 : Review of the condition of two existing water supply dams in Ethiopia (Legedadi and Dire), as Consultant to the Design Office Z&A Associates S.A.
- 2015-16 : Geotechnical Design of the Narok earthfill dam in Kenya, as Consultant to the Design Office Z&A Associates S.A.
- 2016-17: Geotechnical Design of the Nyimur earthfill dam in Uganda, as Consultant to the Design Office Z&A Associates S.A.
- 2016-17: Geotechnical Design of the Sio-Sango earthfill dam in Kenya, as Consultant to the Design Office Z&A Associates S.A.
- 2016-19: Special Geotechnical Consultant to the Designer (CES Consulting Engineers Salzgitter GmbH, Germany) for the seismic design of the Kaps rockfill dam in Armenia (finite element dynamic analyses).

- 2016-17: Geotechnical Consultant for the construction supervision of the Mwomboshi dam in Zambia, as consultant to the Design Office Z&A Associates S.A.
- 2018-19: Geotechnical Design of the Muhazi earthfill dam in Rwanda, as Consultant to the Design Office Z&A Associates S.A.
- 2019-20: Special Geotechnical Consultant to the Designer (ADK Consulting Engineers Greece) for the seismic design of the Minagiotiko hardfill dam in Greece (finite element dynamic analyses).
- 2019: Geotechnical Design of the Amaya earthfill dam in Kenya, as Consultant to the Design Office Z&A Associates S.A.

6. Slopes and cuts:

- Since 1990: Geotechnical Consultant on the stability of slopes and cuts under static and seismic conditions for several government authorities in Greece including the Public Power Corporation (stability of the cuts in the lignite mines), EGNATIA ODOS (Highway embankments and slopes in Metsovo, Malakasi including several reinforced earth embankments) and the Ministry of Public Works (Malakasa highway slide) and Design Offices like GEOMECHANIKI, ODOTECHNIKI, ODOMICHANIKI and SOTIROPOULOS Associates on the design and rehabilitation of several highway slopes and cuts in Greece including reinforced earth embankments.
- Since 1993: Geotechnical Consultant and member of the Board of Technical Experts for several government authorities in Greece including the Hellenic Railway Organization (on the construction of the embankments, cuts and tunnels along the High Speed Railway Link), the Ministry of Public Works (major highway projects in Greece, including the PATHE and E-65 highways and the Elefsis-Stayros-Spata freeway) and EGNATIA ODOS A.E. (design of embankments, cuts and tunnels along the West-East highway link in Greece crossing the Pindus mountains).
- Since 1999 : Geotechnical Consultant for the Ministry of Public Works on geotechnical problems related to the Greek Highway infrastructure, mainly including Highway Slopes and Tunnels. Work included consulting for the Malakasa slide, the Tempi Highway tunnel, the Panagopoula highway tunnel, etc.
- 2007: Geotechnical Expert for the design of the slopes of the external sterile disposal area of the Kleidi lignite mine (PPC).
- 2018-20: Geotechnical consultant of AKTOR SA for the design of several deep cuts along the Dimario-Bulgarian border roadway.
- 2021: Geotechnical consultant of TERNA SA for the rehabilitation of the roads in the Arthithea area after the slope failures induced by the IANOS storm (medicane) in Sept 2020.

7. Foundations of buildings and bridges:

- 1996-98: Geotechnical consultant to ODOMICHANIKI SA for the foundation of several tall highway bridges using rock sockets at the Kavala bypass of Egnatia Odos.
- 2013 : Geotechnical Consultant of the Design Office TTA Associates for the foundation of Highway bridges along the Demir Kapija –Smokvica highway (FYRO Macedonia).
- 2014-17 : Geotechnical Expert of Kalliergos Ltd in Design Verification Engineering (DVE) of the Red Line (Elevated Section) of Doha Metro in Qatar.
- 2014-16 : Special Geotechnical Consultant to the Designer (ADT OMEGA SA) of the Construction JV for the Jubail to Dammam Rail Link - Civil and Track Works Contract CTW-120 in Saudi Arabia. The work included the foundation of several railway bridges.
- 2017-18: Geotechnical consultant of AKTOR SA for the Faliro Corniche motorway. Work included the foundations of several bridges and overpasses.
- 2019-21: Geotechnical consultant of AKTOR SA for the foundation of bridges and embankments along the South Ring Road of Bucharest (Romania).
- 2019-20: Geotechnical consultant of SYSTAS SA for the foundation (using bored piles) of ten railway bridges in the EU funded rehabilitation of the Railway Line Vora–Hani i Hotit in Albania.
- 2019-20: Geotechnical consultant of AK NICOLAOU ENGINEERING (Cyprus) for the foundation of two tall residential buildings (Korantina Towers) in Pafos, Cyprus.
- 2020: Geotechnical consultant of AK NICOLAOU ENGINEERING (Cyprus) for the foundation of the Extension of CAP St. George Hotel in Pafos, Cyprus.
- 2021: Geotechnical consultant of AK NICOLAOU ENGINEERING (Cyprus) for the foundation of a residential building at Konia-Pafos on Swelling clay, in Cyprus.
- 2021: Geotechnical consultant of DOMH SA for the pile foundation of two bridges along the Amvrakia-Vonitsa roadway.

- 2020: Geotechnical consultant of DEAL spA (Italy) for the design of the foundation of the Spud Launching Girder at the Laayoune Port project in Morocco.
- 2020: Geotechnical consultant of DEAL spA (Italy) for the design of the foundation of the Spud Launching Girder at the Mozambique LNG shared and support facilities project, in Mozambique.
- 2021: Geotechnical Consultant of ARCHIRODON NV for the pile foundation of the Shurayrah bridges (with bored piles) for the Red Sea Development project on the red Sea coast of Saudi Arabia.

8. Open cast mining:

- Since 2000: Geotechnical Consultant for the design of the exploitation slopes of the open cast lignite mines in the Megalopoli mine field (PPC). Assignments included more than twenty slope stability analyses and investigations of slope failures.
- Since 2000: Geotechnical Consultant for the design of the exploitation slopes of the open cast lignite mines in the Ptolemais and Amyntaion mine fields (PPC). Assignments included more than thirty slope stability analyses and investigations of slope failures.
- 2006-07: Geotechnical Expert for the stability of the slopes of the Amyntain lignite mine (PPC).
- 2010: Geotechnical Consultant for the design of the slopes of the external sterile disposal area of the Ptolemais lignite mines (PPC).
- 2013: Geotechnical Consultant for the design of the slopes of the external sterile disposal area of the Amyntaion lignite mine (PPC).
- 2014: Geotechnical Consultant for the design of the slopes of the external sterile disposal areas of the Ptolemais & Amyntaion lignite mines (PPC).
- 2016-17: Geotechnical Expert and Member of the Panel of Experts for the Investigation of the major Slope Failure in the Amyntaion lignite mine (PPC) in June 2017.
- 2019 – present: Geotechnical Consultant of the Hellenic Public Power Corporation (PPC) for geotechnical issues in the lignite mines.

9. Other:

- 1982-87 Senior Geotechnical Engineer and head of the Soil Mechanics Laboratory, GEOMECHANIKI Consulting Soils Engineers, Athens, Greece. Worked on various Soil Investigation and Foundation Engineering projects in Greece and overseas.
- 1982-87 Senior Geotechnical Consultant, Archirodon Construction (Overseas) Co., a multi-national corporation operating as a Civil Works Contractor in Europe, Middle East and North Africa. Worked on various geotechnical projects in Greece, Saudi Arabia, Egypt, Sudan and Cyprus.
- 1987-90 Senior Geotechnical Consultant, GEOMECHANIKI Consulting Soils Engineers, Athens, Greece. Worked on various Soil Investigation and Foundation Engineering projects in Greece and overseas.
- Since 1995 : Senior Geotechnical Consultant of ARCHIRODON Construction S.A. Consulted on various projects in Saudi Arabia (marine terminals, breakwaters, power and desalination plants, deep excavations for pumphouses, highway projects, piling projects, dredging and reclamation projects, ground improvement with dynamic compaction and vibro-compaction), in Egypt (marine terminals, underground parking, deep excavations for pumphouses), in the Gulf Countries (marine oil terminals, jetties, power plants, bridge piling projects, reclamation with ground improvement) and in Singapore (deep excavations).
- 2014 : Design of the foundation of a Floating Dry Dock in Jeddah Naval Base (Saudi Arabia) as Consultant to Saudi ARCHIRODON Ltd.
- 2019-21: Geotechnical Consultant of TERNA SA for the investigation of the long-term settlements of the Corinth-Patras Motorway at the Lykoporia area.

Distinctions – Memberships – Invited Lectures :

- Associate Member, American Society of Civil Engineers (ASCE).
- Member, American Scientific Research Society "Sigma Xi".
- Member, Technical Chamber of Greece and Greek Association of Civil Engineers.
- 1991 Invited Discussion Leader, 10th European Conference on Soil Mechanics and Foundation Engineering, Florence, Italy, 1991, on the constitutive behaviour of soils.
- 1991 Invited Lecturer, Ecole Centrale de Paris, on Constitutive Laws for cemented soils, November 1991.

- 1993 Invited Discussion Leader, 1st International Symposium on Hard Soils - Soft Rocks, Athens, 1993, on the mechanical behaviour of structured soils.
- 1994 Invited Lecturer, Universite Libre de Brussels (ULB) on the Mechanical Behaviour of Structured Soils, June 1994.
- 1995 Invited Lecturer, International Symposium on Computational Plasticity (COMPLAS IV), Barcelona, Spain, 1995, on the constitutive behaviour of structured soils.
- 1995 Invited teacher, Short Postgraduate Course on the Mechanical Behaviour of Structured Soils, Universita degli Studi di Roma "La Sapienza", October 1995.
- 1995 Member of the CEN Special Committee for the updating of Eurocode-7 (Geotechnics), since 1995. Participated in the group which drafted the current text to Eurocode 7.
- 1996 Invited Lecturer on "Tunnelling in weathered rock: Rock or Soil Mechanics approaches?", International Symposium on the Geotechnical Aspects of Underground Construction in Soft Ground, City University, London, April 1996
- 1997 General Co-Reporter on Case Histories of Geological, Rock and Mining Engineering" at the 4th Int. Conf. on Case Histories in Geotechnical Engineering, St. Louis, Missouri, USA, 1997. Report on the design and construction of the Olympion Underground Station (Athens Metro).
- 1998 Invited Lecturer, Technical University of Graz (Austria) on the experiences gained from the construction of the Athens Metro project, June 1998.
- 1998 General Reporter, 2nd International Symposium on Hard Soils - Soft Rocks, Napoli, October 1998, on Modelling the Soil Behaviour.
- 1999 Invited Lecturer, XII European Conference on Soil Mechanics and Geotechnical Engineering, Amsterdam, June 1999, on the Construction of the Athens Metro.
- 2000 Invited Lecturer, EUROCK 2000 - International Symposium on Rock Mechanics and Tunnelling, Aachen, Germany March 2000, on "Recent Tunnelling Projects in Greece".
- 2001 Invited Lecturer, Int. Conf. on Underground Infrastructure Rersearch, Kitchener, Ontario, Canada, June 2001, on "Tunnelling in Southern Europe – Research and practice".
- 2001 Discussion Panel Member, 15th Int. Conf. on Soil Mechanics and Geot. Engrng (ICSMGE), Istanbul, Turkey, August 2001. Discussion Session on "Urban Tunnelling Techniques"
- 2001-03 : Head of the Department of Geotechnical Engineering at the National Technical University of Athens.
- 2003 Invited Lecturer, FIG International Conference on Deformation Measurements. Lecture on "Monitoring and Modelling Ground Deformations during Tunnelling", Santorini-Greece, May 2003.
- 2004 Invited Lecturer, AMIREG-2004 International Conference. Lecture on " Quantitative risk assessment in geotechnical and mining projects ", Chania-Greece, June 2004.
- 2004-2006 : Deputy Director of the Post-graduate course on "Design and Construction of Underground Structures" at the National Technical University of Athens.
- 2005 Invited Lecturer, International Conference on Computer Methods and Advances in Geomechanics (IACMAG), Torino, June 2005. Lecture on «Numerical Analysis in the Design of Urban Tunnels".
- 2006-08 : Director of the Post-graduate course on "Design and Construction of Underground Structures" at the National Technical University of Athens
- Since 2008 : Member of the CEN/SC7 Evolution Group for EC7 (EG4 : Numerical Methods and Eurocode 7).
- 2010-14 : Director of the Post-graduate course on "Design and Construction of Underground Structures" at the National Technical University of Athens
- 2011-17 : Head of the Department of Geotechnical Engineering at the National Technical University of Athens.
- 2011 : Invited Lecturer, XV European Conference on Soil Mechanics and Geotechnical Engineering, Athens, Sept 2011, General Report on Excavation and Tunnelling.
- 2013 : Invited Lecturer at the Mediterranean Workshop on Landslides (<http://www.mwl.unina2.it/>), Napoli, Italy, October 2013. Lecture topic : Modeling of Hard Soils & Weak Rocks for the Investigation of Landslides.
- 2015-18 : Core member of the CEN/EC7 Project Team PT2 for redrafting the Eurocode 7 (Geotechnics)

Current Research Interests :

- (1) Investigation of the properties of naturally cemented soils (bonding, yield loci, de-structuration etc) and partially saturated soils with emphasis on slope instabilities.
- (2) Constitutive modelling of soils with emphasis on repetitive loading, based on Plasticity Theory and the Critical State concepts.
- (3) Numerical analyses in Geotechnical Engineering including non-linear material models, static and seismic loading conditions.

- (4) Underground structures (tunnels, large openings) and deep excavations. Principal Investigator in the FP7 European project “New Technologies for Tunnel Construction” (NeTTUN)” in the period 2013-2017. Has supervised four PhD Theses on topics related to tunnels and tunnelling.
- (5) Foundation Piling of Marine Structures
- (6) Landslides and slope instabilities
- (7) Embankment dams

Publications

(a) Books & Textbooks:

- 1993 M. Kavvadas “Principles of Soil Mechanics” (in Greek), textbook for an undergraduate course at the National Technical University of Athens, Published by the Nat. Tech. Univ. of Athens.
- 1996 M. Kavvadas, “Principles of Environmental Geotechnics” (in Greek), textbook for a graduate course at the National Technical University of Athens, Published by the Nat. Tech. Univ. of Athens.
- 1998 M. Kavvadas, "Design of Underground Structures" (in Greek), textbook for a graduate course at the National Technical University of Athens, Published by the Nat. Tech. Univ. of Athens.
- 2004 R. Frank, C. Bauduin, R. Driscoll, M. Kavvadas, N. Krebs Ovesen, T. Orr and B. Schuppener, “Designer’s Guide to EN 1997-1, Eurocode 7 : Geotechnical Design – General Rules”, published by Thomas Telford, London, ISBN 0 7277 3154 8.
- 2009 M. Kavvadas, “Principles of Soil Mechanics” (in Greek), SYMEON Publishers, Athens Greece
- 2013 M. Kavvadas, “Principles of Environmental Geotechnics” (in Greek), TSOTRAS Publishers, Athens Greece.
- 2016 M. Kavvadas, “Principles of Soil Mechanics” (in Greek), TSOTRAS Publishers, Athens Greece

(b) Theses:

- 1982 'Non-Linear Consolidation around Driven Piles in Clays', ScD Thesis, Dept. of Civil Engineering, MIT, Cambridge, MA., USA, 666p.
- 1980 'Stress-Strain Models for Soils based on Plasticity Theory', SM Thesis, Dept. of Civil Engineering, MIT, Cambridge, MA., USA, 165p.
- 1977 'Non-Linear Stress-Strain Behaviour of Plain and Reinforced Concrete under Cyclic Loading', Diploma Thesis (in Greek), Dept. of Civil Engineering, National Technical University of Athens, Greece, 112p.

(c) Scientific papers in refereed journals (only papers in the English language):

- J01 - 1991 A.G. Anagnostopoulos, N. Kalteziotis, G.K. Tsiambaos and M. Kavvadas.
"Geotechnical properties of the Corinth Canal marls", *Geotechnical and Geological Engineering*, Vol. 9, pp 1-26
DOI: 10.1007/BF00880981 , EID: 2-s2.0-0026096060
- J02 - 1992 M. Kavvadas, A. Giolas and G. Papacharalambous.
"Drainage of supported excavations", *Geotechnical and Geological Engineering*, Vol. 10, pp 141-157
DOI: 10.1007/BF00881149 , EID: 2-s2.0-0026462832
- J03 - 1992 Gazetas G., Fan K., Tazoh T., Shimizu K., Kavvadas M., Makris N.
“Seismic pile group–structure interaction”, *ASCE Geotechnical Specialty Public. No 34*, pp 56-93
EID: 2-s2.0-0026986378
- J04 - 1993 M. Kavvadas and G. Gazetas.
"Kinematic seismic response and bending of free-head piles in layered soil", *Geotechnique*, Vol. 43, No. 2, pp. 207-222.
DOI: 10.1680/geot.1993.43.2.207 , EID: 2-s2.0-0027384417
- J05 - 1994 A.J. Whittle and M. Kavvadas
"Formulation of the MIT-E3 constitutive model for overconsolidated clays", *Journal of the Geotechnical Engineering Division, ASCE*, Vol 120, No 1, pp 173-198.
DOI: 10.1061/(ASCE)0733-9410(1994)120:1(173) , EID: 2-s2.0-0028183942

- J06 – 1994 M. Kavvadas and P. Marinos
 "Prediction of groundwater table lowering for lignite open-cast mining in a karstic terrain in western Macedonia, Greece", *Quarterly Journal of Engineering Geology*, Vol 27, p S41-S55.
 DOI: 10.1144/GSL.QJEGH.1993.027.0S.06 , EID: 2-s2.0-0028603757
- J07 - 1994 M. Kavvadas, B.P. Papadopoulos and N. Kalteziotis.
 "Geotechnical properties of the Ptolemais lignite", *Geotechnical and Geological Engineering*, Vol 12, p 87-112.
 DOI: 10.1007/BF00429768 , EID: 2-s2.0-0028596672
- J08 - 1996 P. Marinos and M. Kavvadas
 "Environmental effects in a karstic aquifer due to seepage from an in-river reservoir", *Bulletin of the Int. Assoc. Eng. Geology (IAEG)*, October 1996, Vol 54, pp 111-117.
 EID: 2-s2.0-0030251004
- J09 - 1996 M. Kavvadas and P. Marinos
 "Rise of the groundwater table when the flow is obstructed by tunnels", *Groundwater Geo-engineering (IAEG Bulletin)*, Vol 7, pp 3-6.
- J10- 1997 P. Marinos and M. Kavvadas
 "Effects of shallow tunnels on the groundwater table levels *Bulletin of the Int. Assoc. Eng. Geology (IAEG)*, Vol 56, pp 115-127.
 EID: 2-s2.0-0031245833
- J11 - 2000 M. Kavvadas and A. Amorosi
 "A constitutive model for structured soils", *Geotechnique*, Vol 50, No 1, pp 263-273.
 EID: 2-s2.0-0034111811
- J12 - 2005 M. Kavvadas
 "Monitoring ground deformation in tunnelling : Current practice in transportation tunnels", *Engineering Geology*, Vol. 79, No 1-2, pp 93-113
 DOI: <https://doi.org/10.1016/j.enggeo.2004.10.011> , EID: 2-s2.0-19544362679
- J13 - 2006 Bardanis M.E., Kavvadas M.
 "Prediction of the Limiting Void Ratio of clayey soils after drying", ASCE Geotechnical Special Publication on Unsaturated Soils, Vol 147, pp 1085-1096,
 Permalink : [http://dx.doi.org/10.1061/40802\(189\)88](http://dx.doi.org/10.1061/40802(189)88)
- J14 - 2007 Belokas G., Amorosi A. and Kavvadas M.
 "The behaviour of a normally loaded clayey soil and its simulation". One of the selected papers of the Tatsuoka Geotechnical Symposium in Rome (2006) published after peer review in the Book Series in "Solid Mechanics and Its Applications", Special issue, Volume 146, Part 9: 707-7718, 2007, Springer.
 DOI: <https://doi.org/10.1007/978-1-4020-6146-2> , EID: 2-s2.0-84879119207.
- J15 - 2009 Petroutsatou K., Lambropoulos S., Kavvadas M.
 "Road Tunnelling in Variable Ground In Greece: Design Practices, Construction Methods And Cost Estimates", *International Journal of Engineering and Management (IJEM)*, vol 1, No 2, p 123-135.
- J16 - 2010 Belokas G., Kavvadas M.
 "An Anisotropic Constitutive Model for Structured Soils – Part I: Theory", *Computers and Geotechnics*, Vol 37, No 6, Pages: 737-747
 DOI: <https://doi.org/10.1016/j.compgeo.2010.05.001> , EID: 2-s2.0-77955845145
- J17 - 2011 Elia G., Amorosi A., Chan A.H.C., Kavvadas M.
 "Numerical prediction of the dynamic behaviour of two earth dams in Italy using a fully-coupled non-linear approach", *ASCE International Journal of Geomechanics*, Vol 11, No 6, Dec 2011
 DOI: [http://dx.doi.org/10.1061/\(ASCE\)GM.1943-5622.0000043](http://dx.doi.org/10.1061/(ASCE)GM.1943-5622.0000043)
- J18 - 2011 Elia G., Amorosi A., Chan A.H.C., Kavvadas M.
 "Fully coupled dynamic analysis of an earth dam", *Geotechnique*, Vol 61, No 7, pp 549-563.
 DOI: <https://doi.org/10.1680/geot.8.P.028> , EID: 2-s2.0-79959311993
- J19 - 2011 Belokas G., Kavvadas M.
 "An Intrinsic Compressibility Framework for Clayey Soils", *Geotechnical and Geological Engineering (GGE)*, Vol 29, No 5 (Sept 2011), pp 855-871
 DOI: <https://doi.org/10.1007/s10706-011-9422-0> , EID: 2-s2.0-80052065315
- J20 - 2014 Tzivakos K., Kavvadas M.
 "Numerical Investigation of the Ultimate Lateral Resistance of piles in soft clay", *Frontiers of Structural and Civil Engineering*, Vol 8, No 2 (June 2014), pp 194-200
 Permalink : <https://doi.org/10.1007/s11709-014-0251-0> , EID: 2-s2.0-84901369624

- J21 - 2017 Kavvadas M., Litsas D., Vazaios I., Fortsakis P.
 “Development of a 3D Finite Element Model for Shield EPB Tunnelling”, *Tunnelling and Underground Space Technology*, Vol 65, May 2017, pp 22-34
 DOI: <http://dx.doi.org/10.1016/j.tust.2017.02.001>
- J22- 2017 Kalos A. and Kavvadas M.
 “A constitutive model for Strength Degradation of Rockmasses (SDR)”, *Rock Mechanics and Rock Engineering*, Vol 50, No 8 (Aug 2017), pp 1-24 ,
 DOI <https://doi.org/10.1007/s00603-017-1288-x>
- J23 - 2017 Litsas D, Sitarenios P & Kavvadas M.
 “Parametric investigation of tunnelling-induced ground movement due to geometrical and operational TBM complexities”, *Rivista Italiana di Geotecnica*, Vol 51(4), pp 22-34,
 DOI: <https://doi.org/10.19199/2017.4.0557-1405.22>
- J24 - 2019 Kavvadas M., Kalos A.
 “A Time-dependent plasticity Model for Structured soils (TMS) simulating drained tertiary creep”, *Computers and Geotechnics*, Vol 109, May 2019, 130-143,
 DOI: <https://doi.org/10.1016/j.compgeo.2019.01.022>
- J25 - 2019 Efthimiou S., Kavvadas M.
 “The behavioural framework of a lightly cemented high plasticity clay under low effective stresses”, *Geotechnical and Geological Engineering*, (GGE), Vol 37, Issue 5, 4269–4283
 DOI: <https://doi.org/10.1007/s10706-019-00906-0>
- J26 - 2020 Sitarenios P., Kavvadas M.
 “A plasticity Constitutive Model for Unsaturated, Anisotropic, nonexpansive soils (CMUA)”, *Int J Numer Anal Methods Geomech.* Vol 44(4), pp. 435–454. <https://doi.org/10.1002/nag.3028>
- J27 – 2020 Kavvadas M., Roumpos Ch., Schilizzi P.
 “Stability of Deep Excavation Slopes in Continuous Surface Lignite Mining Systems”, *Geotechnical and Geological Engineering*, (GGE), Vol 38, Jan 2020, 791–812
 DOI: <https://doi.org/10.1007/s10706-019-01066-x> , Sharedit: <https://rdocu.be/bSciY>
- J28 – 2021 Chortis F., Kavvadas M.
 “Three-Dimensional Numerical Analyses of Perpendicular Tunnel Intersections” *Geotechnical and Geological Engineering*, (GGE), (2021) DOI: <https://doi.org/10.1007/s10706-020-01587-w>
- J29 – 2021 Chortis F., Kavvadas M.
 “Three-Dimensional Numerical Investigation of the Interaction between Twin Tunnels” *Geotechnical and Geological Engineering*, (GGE), (2021) DOI: <https://doi.org/10.1007/s10706-021-01845-5>
- J30 – 2022 Georgiou, D., Kalos, A. & Kavvadas, M.
 «3D Numerical Investigation of Face Stability in Tunnels With Unsupported Face». *Geotechnical and Geological Engineering*, Vol 40, pp 355-366. <https://doi.org/10.1007/s10706-021-01900-1>
- J31 – 2022 Kavvadas, M., Georgiou, D. & Kalos
 “Numerical Investigation of Tunnel Face Stability Using Forepoling or Fiberglass Nails”. *Geotechnical and Geological Engineering*, Vol 40, pp 843-855. <https://doi.org/10.1007/s10706-021-01930-9>
- J32 – 2022 Kavvadas M., Roumpos C., Servou A. & Paraskevis N.
 “Geotechnical Issues in Decommissioning Surface Lignite Mines—The Case of Amyntaion Mine in Greece”, *Mining 2022*, 2, 278-296. <https://doi.org/10.3390/mining2020015>
- J - 2021 Litsas D, Sitarenios P, Kavvadas M.
 “Investigation of the interplay between face support pressure and soil permeability on ground movements in Shield Tunnelling”, submitted for publication in *Journal of Geotechnical and Geo-environmental Engineering*.
- J - 2021 Kalos A., Kavvadas M.
 “Numerical Investigation of Creep-Induced Slope Instabilities”, submitted for publication in *Computers and Geotechnics*.

(d) Scientific papers in Conferences (only papers in the English language):

- C001 - 1982 S. Pollalis, J.J. Connor and M. Kavvadas.
 "Lateral Stiffness of a Pile subject to Static Monotonic Loading", *Proc. Third Int. Conf. on the Behavior of Offshore Structures*, MIT, Cambridge MA, USA.

- C002 - 1982 M. Kavvadas and M.M. Baligh.
"Non-Linear Consolidation Analyses around Pile Shafts", *Proc. Third Int. Conf. on the Behavior of Offshore Structures*, MIT, Cambridge MA, USA.
- C003 - 1983 M. Kavvadas.
"A Constitutive Model for Clays based on Non-Associated Elasto-Plasticity", *Proc. First Int. Conf. on Constitutive Laws for Engineering Materials*, Tucson, AZ, USA.
- C004 - 1983 M.P. Cleary, M. Kavvadas and K.Y. Lam.
"Development of a fully 3-D Simulator for the Analysis and Design of Hydraulic Fracturing in Rocks", *Proc. Annual Symp. on Low Permeability Reservoirs*, Denver CO, USA.
- C005 - 1986 S. Pollalis and M. Kavvadas
"A Numerical Model for Offshore Foundations", *Proc. Fifth Int. Symp. on Offshore Mechanics and Arctic Engineering*, Tokyo, Japan.
- C006 - 1988 G.A. Leonards, E. Sotiropoulos and M. Kavvadas
"Helice: the Lost Town of Ancient Greece", *Proc. Int. Symp. on the Engineering Geology of Ancient Works, Monuments and Historical Sites*, Athens, Greece.
- C007 - 1990 M. Zakas, I. Mihalis, C. Tsatsanifos, M. Kavvadas and E. Alkalais
"Rock-mass classification by means of recording drilling parameters", *Proc. Int. Symp. on Mechanics of Jointed and Faulted Rock*, Vienna, Austria.
- C008 - 1990 M. Kavvadas
"Some considerations on the stability of the Corinth Canal slopes", *Fourth European Young Geotechnical Engineers Conference*, Delft, The Netherlands.
- C009 - 1991 M. Kavvadas
"A kinematic hardening constitutive model for clays", *Proc. 10th European Conf. on Soil Mechanics and Foundation Engineering*, Firenze, Italy, Vol 1, pp 229-232.
- C010- 1991 A.G. Anagnostopoulos, B.P. Papadopoulos and M. Kavvadas
"Direct estimation of settlements on sand, based on SPT results", *Proc. 10th European Conf. on Soil Mechanics and Foundation Engineering*, Firenze, Italy, Vol 1, pp 293-296.
- C011 - 1991 M. Kavvadas, P. Papanikolaou and E.V. Alkalais.
"Bearing capacity of driven piles in coral formations", *Proc. Int. Conf. on Deep Foundations*, Paris, France.
- C012 - 1992 M. Kavvadas, P. Marinos and A. Anagnostopoulos.
"Stability of open-pit lignite slopes in Ptolemais, Greece", *Proc. Sixth Int. Symp. on Landslides*, Christchurch, New Zealand, pp 1293-1298.
- C013 - 1993 M. Kavvadas, A. Anagnostopoulos and N. Kalteziotis.
"A framework for the mechanical behaviour of the cemented Corinth marl", *Proc. Int. Symp. on Hard Soils - Soft Rocks*, Athens, Greece, pp 577-583.
- C014 - 1993 M. Kavvadas, A. Anagnostopoulos, M. Leonardos and B Karras.
"Mechanical properties of the Ptolemais lignite", *Proc. Int. Symp. on Hard Soils - Soft Rocks*, Athens, Greece, pp 585-592.
- C015 - 1994 P. Marinos and M. Kavvadas.
"Geo-environmental impact of the proposed diversion of Acheloos river (W. Greece) on its deltaic groundwater and wetlands", *Proc. 4th International Congress on Soil and Groundwater Protection*, Torino, March 1994, pp 775-783.
- C016 - 1994 P. Marinos, M. Kavvadas and V. Perleros.
"Environmental effects in a karstic aquifer due to seepage from an in-river reservoir", *Proc. Int. Symp. on Geological Engng. and Geoenvironmental Protection*, Organised by the IAEG, Constanza, Romania, pp 42-53.
- C017 - 1994 M. Kavvadas and G. Gazetas.
"Kinematic seismic response and bending of piles in layered soil", *Proc. 2nd Intern. Conf. on Earthquake Resistant Construction and Design (ERCAD) Conference*, Berlin, pp 395-402.
- C018 - 1994 P. Marinos, M. Kavvadas, V. Perleros, D. Rozos, E. Nikolaou, and J. Chatzinakos.
"Anticipated changes in groundwater conditions and environmental impact in a deltaic lowland due to a large-scale river diversion", *Proc. 7th Congress IAEG*, Lisbon, Portugal, pp 2993-3002.
- C019 - 1994 P. Marinos, G. Xeidakis, M. Kavvadas, M. Galos, B. Kleb and I. Marek.
"Underground housing and cellars in volcanic tuffs. Variations in the geotechnical behaviour and experiences from Greece and Hungary", *Proc. 7th Congress IAEG*, Lisbon, Portugal, pp 4415-4422.
- C020 - 1994 M. Kavvadas, P. Marinos, A. Anagnostopoulos.
"Evaluation of the abutment stability of a ninety-year-old railway bridge founded on serpentine", *Proc. 7th Congress IAEG*, Lisbon, Portugal, pp 4029-4036.
- C021 - 1994 P. Marinos and M. Kavvadas
"Recharge and discharge regime in a deltaic lowland environment", *Proc. of the 25th Congress of the Intern. Assoc. of Hydrogeologists (IAH), Water Down Under 1994*, Adelaide, S. Australia, Nov. 1994, Vol. 1, pp 499-504.
- C022 - 1995 M. Zacas, M. Kavvadas, I. Mihalis.
"The use of recording drilling parameters in rock-mass characterization", *Proc. 8th Int. Congress on Rock Mechanics*, Tokyo, Sept. 1995.

- C023 - 1995 M. Kavvadas and A. Anagnostopoulos
 "A framework for the mechanical behaviour of bonded soils", *Proc. XI European Conf. on Soil Mechanics and Foundation Engineering*, Copenhagen, June 1995, Vol 3, pp 113-118.
- C024 - 1995 M. Kavvadas
 "Return mapping integration algorithms and consistent Jacobian operators for rate-independent Plasticity",
 Proc. 4th National Conference on Mechanics, Xanthi, Greece, June 1995.
- C025 - 1995 M. Kavvadas
 "A plasticity approach to the mechanical behaviour of bonded soils", *Proc. 4th Int. Conf. on Computational Plasticity*, Barcelona, Spain, April 1995 (invited paper).
- C026 - 1995 P. Marinos and M. Kavvadas
 "Estimation of large scale transmissivity and leakage of a reservoir in karstic terrain using piezometric data. A case in northern Greece", *Proc. Intern. Symp. and field seminar on Karst Waters and Environmental Impacts*, Antalya, Turkey, Sept. 1995, pp 389-395.
- C027 - 1996 M. Kavvadas, L.R. Hewison, P.G. Laskaratos, C. Seferoglou and I. Michalis
 "Experiences from the construction of the Athens Metro", *Proc. Intern. Symp. on the Geotechnical Aspects of Underground Construction in Soft Ground*, City University, London, April 1996, pp 277-282.
- C028 - 1996 M. Kavvadas
 "Tunnelling in Weathered Rock. Rock or Soil Mechanics approaches?", *Proc. Intern. Symp. on the Geotechnical Aspects of Underground Construction in Soft Ground*, City University, London, April 1996. Invited Discussion, pp 337-340.
- C029 - 1996 P. Marinos, M. Kavvadas and V. Perleros
 "Investigation of the over-exploitation of a major alluvial aquifer in Thessaly, Greece", *Proceedings 3rd USA/CIS Joint Conference on Environmental Hydrology and Hydrogeology*, Organised by the American Institute of Hydrology, Tashkent, Uzbekistan, Sept. 1996.
- C030 - 1997 M. Kavvadas, I. Psycharis and C. Seferoglou
 "Non-linear finite element analysis of the NATM excavation of an underground station for the Athens Metro", *Proc. Int. Symp. on Rock Support*, Lillehammer, Norway, June 1997.
- C031 - 1997 P. Marinos and M. Kavvadas
 "Rise of the groundwater table when flow is obstructed by shallow tunnels", *Proc. 27th Congress of the Int. Assoc. of Hydrogeologists on Groundwater in the Urban Environment*, Nottingham, UK, September 1997.
- C032 - 1998 M. Kavvadas
 "Analysis and performance of the NATM excavation of an underground station for the Athens Metro",
 Proc. 4th Int. Conf. on Case Histories in Geotechnical Engineering, St. Louis, Missouri USA, March 1998, paper No 6.11.
- C033 - 1998 M. Kavvadas
 "Hard Soils - Soft Rocks: Modelling the behaviour and selection of model parameters", General Report,
Proc. 2nd Intern. Symp. on the Geotechnics of Hard Soils - Soft Rocks, Napoli, October 1998, Vol. 3, pp 1441-1482, A. Balkema Publishers, Rotterdam.
- C034 - 1998 M. Kavvadas and A. Amorosi
 "A plasticity approach for the mechanical behaviour of structured soils", *Proc. 2nd Intern. Symp. on the Geotechnics of Hard Soils - Soft Rocks*, Napoli, October 1998, Vol. 2, pp 591-602, A. Balkema Publishers, Rotterdam.
- C035 - 1998 M. Kavvadas and A.G. Anagnostopoulos
 "A framework for the mechanical behaviour of structured soils", *Proc. 2nd Intern. Symp. on the Geotechnics of Hard Soils - Soft Rocks*, Napoli, October 1998, Vol. 2, pp 603-614, A. Balkema Publishers, Rotterdam.
- C036 - 1999 M. Kavvadas
 "Experiences from the construction of the Athens Metro project", *Proc. 12th European Conference of Soil Mechanics and Geotechnical Engineering*, Amsterdam, June 1999, Vol 3, pp 1665-1676 - Invited lecture.
- C037 - 1999 A. Amorosi and M. Kavvadas
 "A plasticity-based constitutive model for natural soils - a hierarchical approach", *Proc. 3rd EuroConference on Constitutive Modelling of Granular Materials*, Horton, Greece, June 1999. In book: *Constitutive Modelling of Granular Materials* pp 413-436, January 2000, DOI10.1007/978-3-642-57018-6_20
- C038 - 1999 I. Mihalis and M. Kavvadas
 "Ground movements caused by TBM tunnelling in the Athens Metro Project ", *Proc. Int. Symp. on the Geotechnical Aspects of Underground Construction in Soft Ground*, Tokyo, Japan, June 1999.
- C039 - 2000 M. Kavvadas
 "Tunnels for Traffic Routes in Greece", *Proc. EUROCK 2000 Symposium on Rock Mechanics and Tunnelling*, Aachen, Germany, March 2000 (Invited lecture).
- C040 - 2001 P. Marinos, G. Tsiambaos and M. Kavvadas
 "Geological and geotechnical conditions of the Corinth Canal", *Proc. Int. Symp. on Engineering geology and the Environment*, Athens, Greece, June 2001, Vol. 3, pp. 3987-4003.

- C041 - 2001 M. Kavvadas and G. Belokas
 "An Anisotropic Elastoplastic Constitutive Model for Natural Soils", *Proc. Int. Conf. on Computer Methods and Advances in Geomechanics (IACMAG)*, Vol 1, pp 335-340, Tucson, Arizona, USA, January 2001.
- C042 - 2001 A. Amorosi, F. Cotecchia and M. Kavvadas
 "Mechanical behaviour of a natural clay: Experimental results and constitutive modelling", *Proc. XVth Int. Conf. on Soil Mechanics and Geotechnical Engineering*, Vol 1, pp 13-16, Istanbul, Turkey, August 2001.
- C043 - 2001 I. Mihalidis, M. Kavvadas and A. Anagnostopoulos
 "Tunnel Stability Factor – A new parameter for weak rock tunnelling", *Proc. XVth Int. Conf. on Soil Mechanics and Geotechnical Engineering*, Vol 2, pp 1403-1406, Istanbul, Turkey, August 2001.
- C044 - 2002 A. Amorosi and M. Kavvadas
 "A critical review of the State Boundary Surface concept in light of advanced constitutive modelling", Proceedings of the 3rd NUMOGG Conference, Rome, May 2002.
- C045 - 2002 P. Marinou, M. Kavvadas, G. Tsiambaos and H. Saroglou
 "Rock slope stabilisation in Mythimna Castle, Lesvos Island, Greece", 1st European Conf. on Landslides, Prague, June 2002.
- C046 - 2002 M. Kavvadas, A. G. Anagnostopoulos, V. N. Georgiannou & M. E. Bardanis
 "Characterisation and engineering properties of the Corinth marl", Proceedings of a Workshop on Characterisation and Engineering Properties of Natural Soils, Singapore, T.S. Tan et al, (eds), Vol 2, pp 1435-1459, Nov. 2002, A.A. Balkema Publishers.
- C047 - 2003 Bardanis M. & M. Kavvadas
 "Laboratory investigation of the virgin drying of the Corinth Marl", Proc. Int. Conf. titled "From experimental evidence towards numerical modelling of unsaturated soils", Bauhaus Universitaet, Weimar, Germany, 18-19 September 2003.
- C048 - 2003 Bardanis M. & M. Kavvadas
 "The concept of 'Apparent' Compression Index", Proc. Int. Conf. titled "From experimental evidence towards numerical modelling of unsaturated soils", Bauhaus Universitaet, Weimar, Germany, 18-19 September 2003.
- C049 - 2003 M. Kavvadas
 "Monitoring and Modelling Ground Deformations during Tunnelling", Proc. 11th Int. Symposium on Deformation Measurements (FIG), Santorini-Greece, May 2003, pp 371-390, Published by the Dept. of Civil Engrng, University of Patras.
- C050 - 2004 M. Kavvadas
 "Quantitative risk assessment in geotechnical and mining projects", Proc. 1st Intern. Conf. on Advances in Mineral Resources Management and Environmental Geotechnology (AMIREG), Chania, Crete, June 2004.
- C051 - 2005 G. Belokas, M. Kavvadas & A. Amorosi
 "Modelling the behaviour of reconstituted soils under radial stress paths", *Proc. 11th Int. Conf. on Computer Methods and Advances in Geomechanics (IACMAG)*, Vol 1, pp 249-256, Edited by G. Barla & M. Barla, Torino, Italy.
- C052 - 2005 M. Kavvadas
 "Numerical Analysis in the Design of Urban Tunnels", Invited Lecture, *Proc. 11th Int. Conf. on Computer Methods and Advances in Geomechanics (IACMAG)*, Vol 4, pp 453-466, Edited by G. Barla & M. Barla, Torino, Italy.
- C053 - 2005 M. Kavvadas
 "Risk Analysis and Probabilistic Modelling in Geotechnical Engineering", Proc. Intern. Workshop on Geoenvironment and Geotechnics (GEOENV 2005), Milos Island, Greece, 12-14 Sept. 2005, pp 15-21.
- C054 - 2005 Bardanis M.E. and M. Kavvadas
 "Laboratory Investigation of the virgin drying of Corinth Marl", Proc. Int. Conference From Experimental Evidence towards Numerical Modelling of Unsaturated soils, Weimar, Germany, Sept 2003. Springer.
- C055 - 2006 Bardanis M.E. and M. Kavvadas
 "Prediction of the Limiting Void Ratio of Clayey Soils after Drying", Proc. 4th Int. Conference on Unsaturated Soils, Tucson, Arizona, 2-6 April 2006.
- C056 - 2006 Pantazidou M., Stamataki E. and Kavvadas M.
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