

Paul (Pavlos) G. Marinos

EMERITUS PROFESSOR AT THE NATIONAL TECHNICAL UNIVERSITY OF
ATHENS, CIVIL ENGINEERING DEPT.

Honorary President of the International Association of
Engineering Geology and the Environment
INDEPENDENT CONSULTING ENGINEER

September 2020

1. Education –Academic Status – Employment

Dr Paul Marinos received a Mining Engineering degree from the School of Mines of the National Technical University of Athens, Greece, in 1966, a postgraduate degree in Applied Geology from the University of Grenoble, France, and his Doctorate in Engineering Geology from the same University in 1969.

He worked for French and Greek big design and construction companies until 1977 and then was elected as Professor at Democritus University in Northern Greece. From 1988 Dr Marinos has been Professor of Engineering Geology in the School of Civil Engineering in the National Technical University of Athens and has served as head of the Geotechnical Section of the School for several years. From 2001 to 2004 and from 2006 to 2008 he was the Director of a Graduate Course in Tunneling and Underground Construction. At present he is Emeritus Professor of the same University.

For more than 40 years he acts as independent consulting engineer in Engineering Geology and Geotechnics or as a member of panel of experts for important engineering structures and infrastructure works, around the world..

2. Consulting and Expert Services

Dr Paul Marinos has extensive industrial experience having served as consultant, independent reviewer, member of consulting boards, panel of experts or expert in legal cases on major civil engineering works, such as dams and tunnels, landslide-rock slide cases and water resources projects, in:

Albania, Armenia, Bulgaria, Burundi, Cameroon, Chile, Colombia, Cyprus, Ecuador, Ethiopia, Georgia, Greece, France, India, Iran, Iraq, Israel, Jordan, Kenya, Kosovo, Lebanon, Madagascar, Malawi, Morocco, Nepal, Nigeria,

Papua New Guinea, Pakistan, Peru, Portugal, Qatar, Saudi Arabia, Laos, Rwanda, Serbia, Spain, Sri Lanka, Sweden, Tajikistan, Tanzania, Turkey, Uganda, Ukraine and Zambia.

Many of these concern expert services associated with a World Bank involvement. Most of them concern tunnel and dam design and construction.

3. Awards and named major lectures

- **Knighthood** in the order of “*Palme Académiques*” from the French Republic (2014)
- **Hans Cloos medal**, Intern. Association of Engineering Geology (IAEG, 2001)
- **André Dumont medal** of the Geological Society of Belgium (1999).
- **6th Glossop Lecture and medal** of the Geological Society of London (2002),
- 19th Rocha Lecture in Lisbon (2002),
- **The 2010 Jahns Distinguished Lecturer and award** of the Geological Society of America and the Association of Engineering Geologists (being the 1st Lecturer chosen from outside North America, since the creation of the award in 1987)
- 33rd Cross Canada Lectures Tour, Canadian Geotechnical Society (2005),
- Rock Mechanics Spanish annual Lecture in Madrid (2006),
- Invited lecture tour in Australia, Australian Geomechanics Society (2010),
- Invited lectures tour in the SE Asian countries (2013)
- **Doctor Honoris Causa** of the University of Thrace (2014)

4. University invitations

- Visiting Professor, Geology Department, of the University of Grenoble, France (1987)
- Visiting Professor, School of Mines in Paris (2003)
- Federal Technical University (EPFL), Lausanne, Switzerland. Teaching in the graduate course in Tunnelling (2009-2012)
- Polytecnico of Turin, Italy. Teaching in the biannual graduate course for mechanized tunnelling (2009 – 2016)
- Invited lectures at highly reputed Universities:
MIT, University of California-Berkley, Georgia Tech, Virginia Tech, UCLA, University of Texas - Austin, Northwestern University, Purdue University, USA, University of Durham, UK, University of Coimbra, Portugal, University

of Kobe, Japan, Budapest Technical University, University of Istanbul, Aristotle University of Thessalonica, Greece, Griffiths University, Australia, Tongji University Shanghai, China and many others

5. Research

Dr Marinos and his team conduct research on a variety of applications of geology to engineering, mainly rock mass characterization, weak rock properties and behavior, karstic terrain, with special emphasis to engineering design and construction. His work covers dams, tunneling, landslides, slope and rock mass instability. Dr Marinos has authored or co-authored over 320 papers in highly ranked journals or major conference proceedings. He was a key or invited lecturer in more than 120 conferences or special events worldwide.

6. Editor

Dr Marinos is Co-Editor in Chief of the journal “*Geotechnical and Geological Engineering*” and also associate editor or a member of the Editorial Board of a number of prominent journals as “*Engineering Geology*”, “*Bulletin of the International Association of Engineering Geology*”, “*Environmental Earth Sciences*”, “*Rock Mechanics*” and “*Environmental and Engineering Geosciences*”. He has edited proceedings published by international publishers.

7. Member of learned and engineering Societies

- International Association of Engineering Geology and the Environment (IAEG).

Honorary President 7- Oct 2021

He served as a **President** from 1994-1998

- Honorary member of the International Association of Hydrogeologists (IAH).
- Association of Environmental and Engineering Geologists (AEG)
- Geological Society of America (GSA)
- Geological Society of London
- Geological Society of Greece. He has been one of the Presidents
- Greek Tunnelling Society. He was one of the Presidents
- Greek Committee of Large dams

8. Language skills:

English, fluent. French, fluent. Greek, mother tongue. Spanish elementary

9. Selected and recent Consulting and Expert Activities of Paul G. Marinos

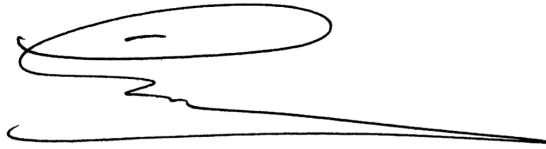
- Pissouri big landslide and unstable area, Cyprus (Expert for the designer), 2020
- Kamuzu dam ,1 Malawi. Review of the report of the design for rehabilitation and rising of the existing dam (member of independent panel of experts), 2019
- Kosovo dams and appurtenant works for rehabilitation (member of independent panel of experts), 2019
- Tamakoshi 5 project, Nepal. Head race and other underground works (member of the independent panel of experts), 2019
- Ituango high earthfill dam, Colombia. Safety issue during construction, mainly tunnels and underground works (member of independent panel of experts for the Interamerican Development Bank), 2018-2019
- Marathon gravity dam, Greece, expert for the ten years inspection, 2018
- Dasu dam and tunnels, Pakistan. Design and construction (Member of the independent Panel of Experts- World Bank involvement), since 2017
- Kaps dam in Armenia. Reconstruction of the unfinished earth fill dam from 1988 (Member of the independent Panel of Experts), since 2016
- Nenskra earth fill dam in Georgia Under construction in particular geological conditions, expert for the contractor), 2016
- Dams in Madagascar (Member of the independent panel of experts for the safety of existing dams– World Bank involvement), 2106-2018
- Aposelemis tunnel in Crete, Greece. TBM tunnel with 15% inclination in karstic environment, Expert for the construction, 2017-2018
- Tunnel T26 in Turkey. (Expert of the Arbitration Tribunal), 2016-2017.
- Chaglia head race tunnel, Peru. 14 km in a highly karstic environment, Collapse in karst (Expert for the designer of the Concessionaire and for insurance resolution), 2016
- Kaniv HPSP Project, Ukraine. A pump storage project from the Dnieper (Member of Panel of Expert– World Bank involvement), 2016
- Tunnels for the Trans Israel North Highway. Expert Independent Geological Expert for the rock mass classification, Dispute resolution, 2016 - 2017

- Nurek dam, Tajikistan. A 300m high earth fill dam operating since the 70's. (Expert for the World Bank for the safety of the structure), 2016
- Mosul dam, Iraq. Gypsum in foundation. Dissolution and leakages (Lead expert on dam safety for the World Bank), 2015
- Tunnels for the North Marmara Project, Turkey (Expert for the Concessionaire), 2015
- Operation and safety of the 120m Evinos and 125m Mornos high earthfill dams, Greece (Expert for the Consultant). Dams in operation since few decades, 2016-2018
- Kamuzu Barrage, Malawi. Upgrading of the existing dam (Panel of Expert for the Owner, – World Bank Involvement), 2015
- 8 dams for the Nile Basin Initiative in the Victoria Lake basin in Burundi, Uganda, Kenya and Tanzania (Panel of Experts for the owner– World Bank involvement). Design phase, 2014-2018
- 3 Dams in Albania in the Drin valley cascade (Fierza, Komani and Vau i Dejes). Refurbishment of 3 existing dams, improvement of spillway capacity, rise of the dams, spillway tunnels, leakages (Panel of Experts for the owner – World Bank involvement, since), 2014
- Madem Lakkos – Olympias mine, Greece, 8km inclined tunnel, Greece (expert for the owner), 2014
- Landslide of Platanos of the Athens – Patras highway, Greece (Panel of Experts for the Concessionaire), 2014
- Xe-Pian Xe-Namnoy Dam, Laos. Hydroelectric project. Head race tunnel, lining issues (Expert for the Contractor, divergence resolution), 2014
- Struma highway project, Bulgaria (Panel of Experts for the Bulgarian Construction Chamber), 2014
- Nis – Pirot highway, Serbia. Slopes in flysch (Expert for the contractor), 2014
- Pervari 165m high gravity-arch dam, Turkey. Crystalline rock masses (Expert for the designer), 2014
- Eldorado Gold, Skouries mine, Greece. Ground water and environmental issues (Expert for the designer), 2014
- Mwomboshi dam in Zambia. Gneisses and saprolites (Expert for the designer), 2013
- Bisri 73m high earth fill dam in Lebanon. Karstic limestones and soft soils. (Panel of Experts for the owner, World Bank involvement) 2106-2018
- Dam Solea, Cyprus. Leakages through the abutment (Expert for the Consultant), 2013
- Highway Tirana – Elbasan, Albania. Stability of slopes, molassic rocks (Expert for the contractor, divergences resolution), 2013
- Rock slides on the Tempi valley, Greece (expert for one of the parties-contractor in International Arbitration), 2013-14

- Dams in Ethiopia. Investigation for sites in volcanic rock environment (expert for the designer), 2012
- Dams in Lebanon. Investigation for sites. Karstic terrain, (World Bank mission), 2013
- Big landslide in Papua New Guinea. (Panel of experts, for petroleum company), 2012
- Antofagasta copper open cast mine, Chile. Design of slopes of the mine (Panel of Experts), 2012
- Prosilio coal mine, Greece. Stability of marly slopes (expert for the owner), 2012
- Pakal Dul, Kashmir, India. Headrace tunnel in extreme squeezing or bursting conditions, (expert for bidder) 1912)
- Agiokampos 30m earth fill dam, Greece. Recent low strength deposits (Expert for the designer), 2012
- Rogun 335m high earthfill dam, Tajikistan. The highest dam in the world. Stability, tunnels, machine cavern, landslides, active faults, salt under foundation. (Panel of experts for the World Bank). Under construction, since 2011 -2013).
- Quitaraca Hydroelectric project, Peru. HP Tunnel under particular in situ stresses (Panel of Experts, divergence resolution), 2011
- Lhuri Dam and Tunnel, India. Limestones and crystalline rocks (Panel of Expert for the owner), 2010
- Villadora-Chontal dam, Ecuador. Old river channels for leakages (Experts for the designer), 2009
- 5th line tunnel, Mekorot Israel Company (Expert on Geotechnics), 2009
- Railway of Greece. Slopes and tunnels in various formations, active faults, conventional construction (Panel of Experts for the owner), 2000-2006
- Rampur 18km long Tunnel, Hydroelectric Project, India (Panel of Experts for the owner, World Bank involvement), 2009-2013
- Kallidromo rail tunnel (18 km), Greece. Clays, ophiolites, squeezing ground, limestones, active faults, conventional excavation (Panel of Expert), 2001-2006
- 17Km long Acheloos diversion tunnel, Greece. Flysch and limestones (Panel of Experts for the owner), 2002-2003
- Nam Theun dam, Laos. Alternations of sandstones and siltstones (Expert for the Designer), 2007
- Ermenek 210m high arch dam, Turkey on limestones (Expert for the Independent Engineer, Divergences resolution), 2005
- Lyon – Torino 56 km Base Tunnel (Expert in dispute for the owner-France), 2007
- Gibraltar tunnelling crossing, Spain, Morocco. Weak flysch, undersea landslide material (Expert for the designer), 2007-2008)

- Hallandsås tunnel, Sweden. Amphibolites, Slurry TBM (Panel of Experts for the contractor, Divergences resolution)
- Gadoura earth fill dam, 60m high, Greece on weak shales (Panel of Experts for the owner) 2003-2008)
- Sykia 170 m high rockfill dam, Greece, on heterogeneous limestones (Panel of Experts for the owner), 2003
- Egnatia Highway Greece. 680 km highway in Northern Greece with 76 tunnels, crossing a big variety of geological conditions including weak and karstic rocks). (Panel of Experts for the owner), 1995-2006
- Metro of Thessaloniki. Hard clays, soft ground and heterogeneous ground EPB TBM (Consultant for the owner for the design and the tender), 2006
- Godvan 175m high rock fill dam, Iran, molasses (Panel of Experts for the feasibility study), 2000
- Karun 4, 230m high arch dam, Iran, limestones alternating with weaker layers (Panel of Experts for the owner), 2004
- Iasmos 90m high rock fill Dam, Greece on granites (Expert for the designer), 2008)
- Morias Highway in Peloponnesus. Slopes, active faults (Expert for the contractor), 2009
- Smokovo rock fill dam, Greece, 109m high, on ophiolites (Panel of Experts for the owener), 2002-2003, mainly for the impoundment
- Aposelemis earthfill dam, Greece, 61m high, on phyllites (Panel of Experts for the owener)
- Ministry of Public Works, Road Directorate (Expert on slope stability issues), 2006-2011
- Public Power Corporation: Lignite mines (Consultant for ground water issues), 1992-1994
- Public Power Corporation (Greece): Dams and Tunnels (member of the Panel of Experts). Specifically for Ilarion 120m high earthfill dam, 2001-2011
- Metro of Porto, Portugal. Granites and arenitic soils, EPB TBM (Panel of Experts for the owner during construction), 2000-2004
- Metro of Athens. Extension to the port of Piraeus. Big variety of ground from strong to weak rock masses and from hard to soft soils. (Expert for the owner for the preparation of tender documents), 2007
- Metro of Athens. Basic project and extensions, 30km of tunnels in total. Metasandstones alternating with metasiltsstones, heterogeneous and clayey soils; both mechanized –TBM, EPB, OFS - and conventional excavation (Consultant for the owner, from 1996 to present)
- Water management and diversion of Acheloos river (Expert for the consultant 1994-1996)
- Water resources of Central Greece. Mainly karstic terrain (Research project, 1996-8)

- Evinos dam-Mornos dam, diversion tunnel 29, 5 km long, Greece. Flysch, limestones and cherts, Rock TBMs and Double Shield TBMs (Expert for the contractor), 1995-1996
- Evinos 120m high earthfill dam on weak flysch (Expert for the contractor, 1992 -1999). Constructed



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