Curriculum Vitae-MICHAEL G. SAKELLARIOU

Personal Details

Name: **Michael Sakellariou**

Positions: Professor of ***Geomechanics and Engineering Structures***, NTUA, Greece
Dipl. Civil Eng., Rural & Surv. Eng., MSc., DIC, Dr. Eng., M. ASCE

- Director of the Laboratory of Structural Mechanics and Engineering Structures (1997 – present).
- Member of the Executive Board of the Centre for the Assessment of Natural Hazards and Proactive Planning of the School of Rural & Surveying Engineering (2006 – 2007 & 2009 – 2010).
- Member of the National Advisory Board for Sustainable Construction in Public and Private Works (participation of representatives of the Parliament, of University Departments, of Research bodies and Engineering bodies) (2005-2008).
- Associate Member of the Center of Educational Research (2009 – 2010).
- Member of the Senate Committee of Basic Research, NTUA (2010 – 2011).
- Member of the Senate Committee of Institutions and Strategy, NTUA (2009 -2011).
- Associate Member of the Senate Committee of Undergraduate Studies (1996 – 2004).
- Associate Member of the Senate (2005 – 2006).

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http://ntua.academia.edu/Departments/Rural_Surveying_Engineering,
https://www.researchgate.net/profile/Michael_Sakellariou
http://www.mendeley.com/profiles/michael-sakellariou1/

Education

- Doctor Engineer in Applied Mechanics, School of Applied Mathematical and Physical Sciences, Thesis Supervisor Prof. P.S. Theocaris, NTUA (1989)
- Diploma of Imperial College (DIC) (1983)
- MSc in Engineering Rock Mechanics, University of London-Imperial College, Thesis Supervisor Dr. J.W. Bray (1982)
- Diploma in Civil Engineering, Thesis Supervisor Prof. T. Tassios NTUA (1975)
- Diploma in Surveying & Rural Engineering, NTUA (1970)

Teaching

Undergraduate Level

Geotechnical Engineering, Soil Mechanics, Engineering Mechanics

Postgraduate Level

Continuum Mechanics in PGD course "Design and Construction of Underground Structures"
Theory of Deformation in the scales of earth crust and engineering structures in PGD course "GeomaInformatic"

Research Interests

Analytical, Computational and Experimental methods of **stress analysis**, **Hazard** and **Vulnerability** analysis of Natural Catastrophes in **GIS environment**, Application of **Computational Intelligence** in Geotechnical Engineering, 3-D Seismic Analysis of **Rockfalls** in GIS, **Seismic** and rainfall induced

landslides, **Seismic** design of **reinforced earth high embankments** with the criterion of permanent seismic-induced displacements, **Static and Dynamic Monitoring** of structures by using combined **geomatic** (GPS – Laser Scanning - Photogrammetry) and **experimental mechanics** (Strain gauges – Fiber Optics Sensors – Digital Image Correlation – Particle Image Velocimetry) methods, **Fractal Geometry** applied in quantifying rock surface topography, **Rock Fracture** in terms of **Complexity**.

Reviewer

Proposals reviewer

Austrian Science Fund
Schweizerischer Nationalfonds zur Foerderung der Wissenschaftlichen Forschung

Journal reviewer

International Journal of Rock Mechanics, Mining Sciences & Geomechanics Abstracts.
Geotechnical and Geological Engineering - an International Journal.
Rock Mechanics and Rock Engineering.
Computers & Geotechnics
The Journal of Zhejiang University A

Research income

Date received	Source	Project	Value (€)
As Scientific Responsible			
2003-2004	NTUA-THALES	"**Investigation of Landslide Hazard using Neural Networks in a GIS environment**" (PhD candidate Maria Ferentinou, Funded by a basic research program of NTUA)	4400 €
2003-2005	EPEAK-**HERAKLEITOS**	"**Computational and experimental study of the fractal character of rock surfaces**" (PhD candidate I. Stratakos, Co-funded by European Social funds (75%) and National Resources (25%)	33000 €
2005-2006	EPEAEK-**PYTHAGORAS**	"**The Influence of earthquakes and rainfalls to the landslide Phenomenon. Investigation by using IT**" (PostDoc Dr. M. Ferentinou, Co-funded by European Social funds (75%) and National Resources (25%)	90000 €
2008-2010	**Geosynthetic Institute (GSI)**	**"Reinforced slope safety evaluation and design due to seismic loading, based on the determination of the critical slip surface using acceptability criteria" (2008–2010).** (Fellowship PhD candidate Mrs Elena Kapogianni)	12000 €
As participant			
2005	INTERREG IIIC-SIPROCI	Interregional response to natural and man-made catastrophes "**Development of a Decision Support System in East Attica Prefecture**"	30000 €

Participation in proposal submission VRILS (Virtual Reality Interface for Landscapes and Structures; Educational Multimedia Task Force), EUROCORES "GEO-HAZARDS: Using Engineering Solution

Strategies", (GUESS), "Experimental and Computational Investigation of vulnerability of Reinforced earth Highway embankments against seismic hazard and proposal of design guidelines".

Consulting

Steep – Reinforced earth Embankments in Egnatia Highway, Earth Dams, Stress analysis of Tunnels, Foundations of tall buildings, Foundations of Bridges, Foundation of hydraulic structures.

Membership in Societies

American Society of Civil Engineers (ASCE)
International Society of Rock Mechanics (ISRM)
International Society of Soil Mechanics & Geotechnical Engineering (ISSMGE)
British Geotechnical Society (BGS-ICE)

Postdoc Supervisor

1) **Ferentinou** Maria (2005-2007), "Influence of the seismic action and the rainfall in the Landslide phenomenon˙ Investigation with IT tools", supported by PYTHAGORAS II – ENVIRONMENT research project, co-funded by the European Social Fund.
2) **Ferentinou** Maria (2008), "Holistic approach of the optimum management against Landslide Risk", supported by the National Scholarship Foundation.

PhD Supervisor

1) **Kozanis S**. (2002), "***Contribution to the study of rock mass as a continuum of a non-linear anisotropic behaviour with FEM. Application in Underground Works***".

2) **Ferentinou M.**, (2004), "***Assessment of Landslide Hazard with Neural Networks in GIS Environment***".

3) **Stratakos I**., (2008), "***Computational and Experimental Study of the Fractal Behaviour of Rock Surfaces***".

4) **Kapogianni Elena**, "Analytical, Experimental and Computational investigation of Reinforced Earth Embankments under static and seismic loading", in collaboration with ETHZ (Institute for Geotechnical Engineering) and Fellow of the Geosynthetic Institute (2008 – 2011) (in writing up).

5) **Massinas Sp**., "Analytical and Computational investigation of elastoplastic behavior of shallow tunnels" (in writing up).

6) **Charalambous S**., "3-D Rockfall stochastic analysis in GIS environment" (in progress).

MSc Theses Supervisor

1) **Kiernan** Jasper, "***An assessment of the Use of Fractal Geometry in Quantifying Joint Surface Roughness***", University of Durham, (1994).
2) **Matziaris** V. "***Slope stability and Earthquake induced Displacement Analysis in GIS Environment***", University of Durham, (2004).
3) **Moschovelis** A. "***A Computational Study of Influence of Topography and Ground Anisotropy to the In Situ Stresses***", University of Durham, (2004).
4) **Sakellariou** G. "***A Computational Study of the Influence of Ground Anisotropy on the Tunnelling-Structure Interaction***", University of Durham, (2004).
5) **Roussos** E. "***Neural Networks for Landslide Hazard Estimation***", Kings College, University of London, (2000) (Second Examiner)

6) Supervisor of **29** postgraduate theses of three postgraduate courses at the NTUA (Design and Construction of Underground Works, Naval and Marine Technology and Science, GeoInformatics)

Diploma Theses Supervisor

More than **60** Diploma Theses have been supervised.

Papers-Communications

2010

1. Massinas S., **M. Sakellariou** (2010): "Feasibility study for tunnel-building interaction by using the analytic solution for a circular tunnel in an elastic-plastic half space", Geotechnical Challenges in Megacities, International Geotechnical Conference, Moscow, June 2010, Proceedings of the International Geotechnical Conference, Petrukhin, Ulitsky, Kolybin, Lisyuk, Kholmyansky (eds.) "***Geotechnical Challenges in Megacities***", Vol. 3, pp 751-757, GRF 190005, St. Petersburg.
2. Massinas S., **M. Sakellariou** (2010): Discussion by S. Chen; Y.N. Abousleiman, "Closed form solution of plastic zone formation around cicular tunnels in half space obeying Mohr Coulomb criterion", ***Géotechnique***, Vol. 60 (2010), No. 7, pp 569-571.
3. E. Kapogianni, J. Laue, **M.G. Sakellariou**, S.M. Springman (2010): "The use of optical fibre sensors in a geotechnical centrifuge for reinforced slopes", 7th International Conference on Physical Modelling in Geotechnics (ICPMG 2010, Zűrich), in ***Physical Modelling in Geotechnics*** - Springman, Laue & Seward (eds.), Taylor & Francis, London, pp. 343-348.
4. E. Kapogianni, J. Laue, **M.G. Sakellariou**, (2010): "Reinforced slope modelling in a geotechnical centrifuge", 7th International Conference on Physical Modelling in Geotechnics (ICPMG 2010, Zűrich), in ***Physical Modelling in Geotechnics*** - Springman, Laue & Seward (eds.), Taylor & Francis, London, pp. 1125-1130.
5. Kapsampeli Aik. **M. Sakellariou** (2010): "Classification of Tunnelling-Induced Surface Settlement Records using Back Propagation Algorithm of Error", 6th Panellenic Conference of Geotechnical and Geoenvironmental Engineering, Vol. 1, pp. 225-232, Volos 2010.
6. Charalambous S., Matziaris V, Ferentinou M. **Sakellariou M**. (2010): "3-D Analysis and Simulation of Rock Fall, in GIS environment for the design of Countermeasures", 6th Panellenic Conference of Geotechnical and Geoenvironmental Engineering, Volos 2010.
7 Kapogianni E. Laue J., **Sakellariou M**. (2010): "Experimental Investigation of Reinforced Slopes in a geotechnical centrifuge and deformation measurement via optical fibre sensors", 6th Panellenic Conference of Geotechnical and Geoenvironmental Engineering, Vol. 3, pp 51-58, Volos 2010.
8. Kapogianni E., Laue J., **Sakellariou M**. (2010): "Measuring of Deformations on Reinforced soil slopes in a geotechnical centrifuge via Digital Images and PIV analysis", 6th Panellenic Conference of Geotechnical and Geoenvironmental Engineering, Vol. 3, pp. 59-66, Volos 2010.
9. Massinas S., **Sakellariou M**. (2010): "Elastic-Plastic Closed-form solution for plastic zone formation around a circular Tunnel in Half-Space", 6th Panellenic Conference of Geotechnical and Geoenvironmental Engineering, Volos 2010.

2009

1. S. Massinas and **M. Sakellariou** (2009): "Closed form solution for plastic zone formation around a circular tunnel in half-space obeying Mohr-Coulomb criterion", ***Géotechnique***. 10/2009; 59(8):691-701.
2 M.D. Ferentinou, T. Hasiotis, **M.G. Sakellariou** (2009): "Clustering of geotechnical properties of marine sediments through self-organizing maps - an example from the Zakynthos Canyon - Valley system, Greece", Fourth International Symposium on Submarine Mass Movements and their Consequences, Austin, Texas, November, 2009. in D.C. Mosher et al. (eds.), ***Submarine Mass Movements and Their Consequences, Advances in Natural and Technological Hazards Research***, Vol. 28, pp 43-54, Springer Science + Business Media B.V.(2010).

2008

1. V. Gikas and **M. Sakellariou** (2008): "Stability Analysis of Mornos Earth Dam (Greece): Evidence from Numerical Modelling and Geodetic Monitoring", ***Engineering Structures***, 11/2008; 30(11):3074-3081.
2. E. Kapogianni and **M. Sakellariou** (2008): "Comparison of an Analytical Solution for Multi-Step Reinforced Soil Slopes with Conventional Numerical Methods", ***EuroGeo 4***, 4th European Geosynthetics Conference, Edinburgh, September 2008.
3. E. Kapogianni and **M. Sakellariou** (2008): "Analytical Solution of multi-step reinforced soil slopes due to static and seismic loading", ***1st International Conference of Transportation Geotechnics***, Nottingham, August 2008.
4. V. Gikas and **M.Sakellariou** (2008): "Horizontal deflection analysis of a large earthen Dam by means of Geodetic and Geotechnical methods", 13th FIG Symposium on "Deformation Measurements and Analysis" & 4th IAG Symposium on "***Geodesy for Geotechnical and Structural Engineering***", Lisbon, May 2008.
5. Kapogianni E., **Sakellariou M.,** Kalogeras I. (2008): "Integrated methodology for the seismic design of reinforced soil slopes with composite geometry", 3rd Panellenic Conference Seismic Mechanics and Engineering Seismology, paper No. 1893, 17 pages
6. Charalambous S., Kalogeras I. Stratakos I., **Sakellariou M**. (2008): "Three-Dimensional Analysis of Rockfalls Caused by Earthquakes. Case study of the Earthquake occurred on 14/08/2003 at Lefkada (M=6.2)", 3rd Panellenic Conference Seismic Mechanics and Engineering Seismology, paper No. 1892, 21 pages.
7. Stratakos I., Gikas V., **Sakellariou M**., Daskalakis S. (2008): "Instrumental Monitoring of Dynamic Vibrations Implementing Experimental Mechanics Techniques and Geodetic Methods", 3rd Panellenic Conference Seismic Mechanics and Engineering Seismology, paper No. 1875, 14 pages.

2007

1. M. D. Ferentinou and **M.G. Sakellariou** (2007): "Computational Intelligence tools for the prediction of slope performance", Invited paper in "***Computers and Geotechnics***", Special Issue on "Biologically Inspired and other Novel Computing Techniques in Geomechanics", 34(5), pp. 362-384.
2. Kapsampeli Aik. and **Sakellariou M.** (2007): "Use of artificial neural networks for the prediction of tunneling-induced ground movements in urban area", in "***Underground Space: Expanding the Frontiers***", 11th ACUUS (Associated Research Centers for Urban Underground Space) conference, Athens , 10-13 September 2007.
3. Charalambous S., **Sakellariou M.**, (2007) "Estimation of Rock Fall Hazard using a GIS-Based Three-Dimensional Rock Fall Simulation Model", ***Bulletin of the Geological Society of Greece*** vol. XXXX, 1934-1946.
4. Matziaris V., Ferentinou M., Karanasiou S., Angelopoulou O. and **Sakellariou M**., (2007) "Landslide Hazard analysis – A case study in Kerasia village (prefecture of Carditsa)", ***Bulletin of the Geological Society of Greece*** vol. XXXX, 1710-1721.
5. Charalambous St., **Sakellariou M** (2007): "GIS-Based Hazard Assessment in Support of Decision making", ***11th International Conference of International Society of Rock Mechanics*** (ISRM), ***Special Session on Rockfalls***, Lisbon, June, 2007.

2006

1. **Sakellariou M**., M. Ferentinou and St. Charalambous (2006): "An Integrated Tool for Seismic Induced Landslide Hazard Mapping", ***1st European Conference on Earthquake Engineering and Seismology***, September 2006, Geneva, Switzerland .
2. Ferentinou M., **Sakellariou M**., Matziaris V., Charalambous S. (2006): "An introduced methodology for estimating Landslide Hazard for seismic and rainfall induced landslides in a Geographical Information System Environment", Paper 40 in "***2006 ECI Conference on Geohazards***" F. Nadim, R. Pottler, H. Einstein, H. Klapperich and St. Kramer (eds.), Lillehammer, Norway.
3. Massinas S., **Sakellariou M**. (2006): "A parametric study of the tunneling induced surface settlements under 3D conditions", Proceedings ***2nd Intern. Conf***.: "***From Scientific Computing to Computational Engineering***", D. Tsahalis (ed.).

4. C. Mitsakaki, K. Papazissi, **M. Sakellariou**, A. Marinou , D. Tsinas (2006) : "Coulomb Stress Changes in the Gulf of Corinth (Greece) for the 1992-1995 Period", ***3rd IAG Symposium on Geodesy for Geotechnical and Structural Engineering and 12th FIG Symposium on Deformation Measurements***.
5. **Sakellariou M**., M. Ferentinou and S. Charalambous (2006), «Integrated tool for modeling the Hazard Assessment against Landslides in GIS environment» , ***4th Panellenic Conference of the Greek GIS Society, «e-Government: the role of GIS***», Athens.
6. Charalambous S., Ferentinou M., **Sakellariou M**.,(2006) «GIS as supporting tools for the design of Engineering Structures», 2nd Panellenic Conference of Rural and Surveying Engineers, Athens, 2006.
7. **Sakellariou M**., Konaxi F. Papaspiliotopoulou F. and Ferentinou M. (2006) « Simulation of the Influence of Slopes Hydrology on their Stability.», 5th Panellenic Conference of Geotechnical and Geoenvironmental Engineering (2006).
8. **Sakellariou M**., Kollios A. and Mpakaki A. «Design and construction of sequential reinforced walls with metal strips», 5th Panellenic Conference of Geotechnical and Geoenvironmental Engineering (2006).
9. **Sakellariou M**. (2006) « Design of Slopes with the Criterion of the Seismic-Induced Permanent Displacements », 5th Panellenic Conference of Geotechnical and Geoenvironmental Engineering (2006).
10. Ferentinou M. , **M. Sakellariou** (2006) «Slope Stability Investigation and Critical Parameters Rating using SOM- Kohonen Algorithm», 5th Panellenic Conference of Geotechnical and Geoenvironmental Engineering (2006).
11. Charalambous S. and **M. Sakellariou** (2006), "A new three-dimensional simulation model for rock falls", Hazards 2006, 11th International Symposium on Natural and Human-Induced Hazard, Patras.

1990-2005

1. Ferentinou M., **M. Sakellariou** (2005): "Assessing landslide hazard on medium and large scales, using self-organizing maps", in "Landslide Risk Management", Hungr, Fell, Couture and Eberhardt (eds.), ***Joint 2005 International Conference on Landslide Risk Management/18th Annual Vancouver Geotechnical Society Symposium***, Taylor & Francis, pp. 639-648.
2. V. Matziaris, M. Ferentinou, **Sakellariou M**., (2005): "Slope Stability Assessment in Unsaturated Soils under Rainfall Conditions", "***International Workshop in Geoenvironment and Geotechnics*** (GEOENV2005)", Agioutantis & Komnitsas (eds.), Milos 2005, pp. 91-97.
3. Mitsakaki Ch. , **M. Sakellariou**, D. Tsinas, A. Marinou (2005): "Assessment of Coulomb Stress Changes Associated with the 1995 Aigion Earthquake in the Gulf of Corinth (Greece)", ***International Symposium on Geodetic Deformation Monitoring: From Geophysical to Engineering Roles***, Jaen , Spain .
4. **Sakellariou M.G**., Ferentinou M.D. (2005): "A study of slope stability prediction using neural networks", ***Geotechnical and Geological Engineering. An International Journal***, 23, pp 419-445.
5. Matziaris V., **M. Sakellariou** (2005): "Modeling the effect of rainfall in unsaturated slopes", ***IASME Transactions***, Issue 3, Vol. 2, May 2005, pp. 442-447.
6. **Sakellariou M** (2005): "Seismic Stability of Reinforced Slopes Based on the Assessment of Permanent Displacement", Invited paper in ***Ovidius University Annals Series: Civil Engineering,*** Vol. 1, No 7, 61-68.
7. Matziaris V., **M. Sakellariou** (2005): "Slope stability in Unsaturated Soils under Static and Rainfall Conditions", Invited paper in ***Ovidius University Annals Series: Civil Engineering*** Vol. 1, No 7, 103-110.
8. Charalambous S., **M. Sakellariou** (2005): «Assessment of Stability of natural and man made slopes in GIS Environment. Appliation in Highway Engineering», 2nd Panellenic Conference of Highway Engineering, Volos, 2005.
9. Kozanis S., **M. Sakellariou** (2004): "Coupling Geographical Information Systems with Finite Element Analysis", Proceedings ***1st Intern. Conf.: "From Scientific Computing to Computational Engineering***", D. Tsahalis (ed.), Vol. 1, pp 407-414.
10. **Sakellariou M**, D. Katsaris (2004): "Crack Propagation in Specimens with pre-existing Slit and Crack under Uniaxial Compression-Numerical Modelling", Proceedings ***1st Intern. Conf.: "From Scientific Computing to Computational Engineering***", D. Tsahalis (ed.), Vol. 1, pp. 415-421.

11. M. Ferentinou, **M. Sakellariou** (2003): "Slope stability estimation using GIS", In: Rosenbaum MS, Turner AK (eds.) ***Characterization of the Shallow Subsurface: Implications for Urban Infrastructure and Environmental Assessment***. Springer-Verlag, Duesseldorf, 135-140.
12. Massinas B., **Sakellariou M** (2002): "Analytical modeling of the stress concentration problem at the tip of a tectonic crack", ***11th WEGENER*** Assembly, Athens.
13. **Sakellariou M. G**., M. D. Ferentinou (2001): 'GIS-Based Estimation of Slope Stability', ***Natural Hazards Review*** (ASCE), 2, pp. 12-21.
14. **Sakellariou M**., M. Ferentinou, D. Nika (1999): "Landslide hazard estimation with application of GIS", 1st Panellenic Conference "***GIS-Possibilities and Applications, Perspectives and Challenges***", Greek Association of GIS, Athens, 1999, (Proceedings in CD).
15. **Sakellariou M**., Ferentinou M. and Patouchas N. (1998): "Landslides hazard estimation using GIS", Poster presentation, "***Naturally and Anthropogenically induced hazards***", Aquafreda di Maratea, Italy.
16. **Sakellariou M**., P. Ilias (1997): "Investigation of the applicability of Neural networks in the estimation of Slope Stability", ***3rd Panellenic Conference of Geotechnical Engineering***", Patras, Vol 2,pp. 269-276.
17. **Sakellariou M**, St. Kozanis, St. Goulakos (1995): "The Rockfall phenomenon and its mitigation in Highways", 1st Panellenic Conference of Highway Engineering, Larissa, Vol. 1, pp. 263-272.
18. Sklavounos P. and **M Sakellariou** (1995): "Intelligent Classification of Rock Masses", in ***Applications of Artificial Intelligence in Engineering***, X, eds R.A. Adey, G. Rzevski and C. Tasso, Proceedings of the Tenth International Conference on Applications of artificial Intelligence in Engineering, Udine, July 1995, Computational Mechanics Publications, pp 387-393.
19. Augerinou-Kolonia S., **M. Sakellariou**, O. Arambatzi, A. Migardou (1995): "The flooding of Kassos Island of October 1994. Site Investigation", ***2nd National Conference SAMHS***, Athens, (Communication with printed Abstract).
20. **Sakellariou M** and A. Karinas (1994): "Mixed Mode Fracture of Cement Specimens", ***11th Greek Conference of Concrete***, Corfu, Vol. 1, pp. 152-166.
21. **Sakellariou M**, P. Marinos (1994): "Rock Mass Classification Systems. Application of Expert Systems", Symposium of Tunnel Geology. Experience from Greece, Athens. (Communication with printed Abstract).
22. **Sakellariou M** and Chr. Tsatsanifos (1992): «Retaining Structures. Part A' Earth pressure theories", Soil Mechanics Special edition, ***Bulletin of the Institution of Civil Engineers of Greece***, 210, pp. 26-37.
23. **Sakellariou M**, B. Nakos and Ch. Mitsakaki (1991): "On the Fractal Character of rock Surfaces" ***Int. Jnl. of Rock Mech. Min. Sci. & Geomech. Abstr***., 28, pp 527-533.
24. Theocaris P.S. and **M. Sakellariou** (1991): "A Correction Model for the Incompatible Deformation of the Shear Internal Crack", ***Engng. Fracture Mechanics***, 38, pp 231-240.
25. Theocaris P.S. and **M. Sakellariou** (1991): "Crack Propagation in Brittle Materials under Compressive Stresses studied by Caustics", ***Jnl. of Materials Science***, 26, pp 1640-1646.
26. Theocaris P.S. and **M. Sakellariou** (1990): "Cracks and Slits in Compression and Shear: an Experimental Study", ***Acta Mechanica***, 85, pp 55-70.
27. **Sakellariou M** (1984): "Rock Mass Strength", Rock Mechanics Seminar, Technical Chamber of Greece.