

CV - Stelios P. Mavrigiannakis

1. GENERAL INFORMATION

Name: Stelios Mavrigiannakis
Date of Birth: 28/08/1973
Work address: Technical University Crete
School Mineral Resources Engineering
73100 Akrotiri Chania,
Crete, Greece
tel: +30 28210 37644
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Languages Greek
English
Membership Technical Chamber of Greece

2. Education:

10/1999 - 5/2003 M.S., Department of Mineral Resources Engineering, Technical University of Crete (NTUA)(Greek).
9/1992 - 9/1998 Diploma, School of Mining and Metallurgical Engineering, National University of Athens (Greek).

3. Rewards and Recognitions

Scholarship of record for the import and the record in the Postgraduate Program of Environmental Geotechnology of Department of Mechanic Mining Resources of Technical University of Crete for the semesters 9/1999-2/2000 and 3/2000-8/2000.

4. Research Interests

- Measurement of mechanical properties of rocks and other natural or man-made materials (uniaxial compressive strength, strength under triaxial conditions, indirect tension test, elastic modulus, deformation modulus, Poisson's ratio, strain field, stress field, bending strength, strains, anisotropy, etc).

- Measurement of acoustic and dynamic properties of rocks and other natural or man-made materials (acoustic emissions, p- and s-wave velocities, etc)
- Measurement of mechanical properties of concrete (uniaxial compressive strength, elastic modulus, etc) for quality control in construction projects.
- FEM analysis of stress / strain and displacement fields in geomechanics.
- Stability analysis of structures in geomechanics (tunnels, slopes, etc).
- Quality control in laboratory testing.
- New technologies in mine design.
- Development of database applications in mining.

5. Professional Experience

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| 6/2014 - Today | Scientific Laboratory Administration Staff at Rock Mechanics Laboratory, School of Mineral Resources Engineering, Technical University of Crete |
| 9/2006 - 6/2014 | Scientific Collaborator at the Computer Laboratory and the Rock Mechanics Laboratory, Department of Mineral Resources Engineering, Technical University of Crete. |
| 9/2000 - 8/2006 | Scientific Collaborator at the Computer Laboratory and the Rock Mechanics Laboratory, Department of Mineral Resources Engineering, Technical University of Crete. |
| 7-8/1995 | Practical exercise in the mining company «TVX - HELLAS», Stratoni, Chalkidiki, Greece. |
| 7-8/1996 | Practical exercise in the mining company «TVX - HELLAS», Stratoni, Chalkidiki, Greece. |

6. Implementation of Research Projects

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| 5/2009 - 10/2011 | Member of TUC team in European Program Sarma (Sustainable Aggregates Resource Management - SEE) Project Coordinator: Agioutantis Zacharias |
| 1/2012 - 4/2012 | Strategic study for the development of good practices towards the improvement of working environment in Greek Enterprises, Funded by STEGI of Hellenic Federation of Enterprises Project Coordinator: Komnitsas Konstantinos |
| 6/2012 -12/2012 1/2013 -6/2013 | Bioinspired nanocomposites for the strengthening of construction materials,"European Territorial Cooperation", NSRF, Greek General Secretariat for |

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| | Research and Technology (GRST), Project Coordinator: Maravelaki-Kalaitzaki Pagona |
| 10/2012 - 9/2014 | Member of TUC team in European Program SNAP(Sustainable Aggregates Planning in SEE) Project Coordinator: Agioutantis Zacharias |
| 12/2012 | Synergasia 2011: ISTRIA. Development of an integrated rock fall monitoring and prediction system. Greek National Organization of Research and Technology. Project Coordinator: Exadaktylos George |
| 4/2014 - 08/2014 | |
| 4/2015 -6/2015 | |
| 8/2013 -12/2013 | THALES Programme. Development and assessment of innovative experimental techniques for the study of the mechanical behaviour of natural building stones: Applications to the conversation and restoration on monuments of culture heritage. Project Coordinator: Kourkoulis Stavros |
| 4/2015 -7/2015 | |
| 11/2015 | |
| 12/2012 | THALES Programme. Geotechnical characterization of selected areas in Crete using Geophysical and Geotechnical methods. Project Coordinator: Vafidis Antonios |
| 09/2014 - 12/2014 | |
| 5/2019 -12/2019 | InnovaConcrete: Innovative materials and techniques for the conservation of 20th century concrete-based cultural. Project Coordinator: Maravelaki-Kalaitzaki Pagona |

7. Attendance of congresses

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| 19-21 September 2001 | Attendance of international congress of “New Frontiers in Reclamation: Facts and Procedures in Extractive Industry”, Milos, Greece. |
| 27-29 June 2002 | Attendance of international congress of the “4th GRACM Congress on Computational Mechanics - GRACM 2002”, Patra, Greece. |
| 17-22 August 2003 | Attendance of international congress of the “5th EUROMECH Solid Mechanics Conference”, Thessaloniki, Greece. |
| 21-23 May 2003 | Attendance of international congress of “Sustainable Development Indicators in the Mineral Industry”, Milos, Greece. |
| 7-9 June 2004 | Attendance of the 1st international congress of “Advances in Mineral Management and Enviromental Geotechnology”, Hania, Greece. |
| 25-27 September 2006 | Attendance of the 2nd international congress of |

- “Advances in Mineral Management and Environmental Geotechnology”, Hania, Greece.
- 17-20 June 2007 Attendance of international congress of “Sustainable Development Indicators in the Mineral Industry”, Milos, Greece.
- 07-09 September 2009 Attendance of the 3rd AMIREG international congress “Towards sustainable development: Assessing the footprint of resource utilization and hazardous waste management, Athens, Greece.
- 30 June - 3 July 2013 Attendance of the 6th SDIMI international congress “Sustainable Development in the Mineral Industry, Milos, Greece.

8. Journal Publications

Peer-Reviewed Journal Publications

1. Stavrakas , D. Triantis, Z. Agioutantis, **S. Maurigiannakis**, V. Saltas, F. Vallianatos and M. Clarke, Pressure stimulated currents in rocks and their correlation with mechanical properties, Natural Hazards and Earth Systems Sciences (NHES), 2004, 4, 563-567, <http://dx.doi.org/10.5194/nhess-4-563-2004>.
2. Maravelaki-Kalaitzaki, P., N. Kallithrakas-Kontos, D. Korakaki, Z. Agioutantis and **S. Maurigiannakis**, Evaluation of silicon-based strengthening agents on porous limestones, Progress in Organic Coatings, 2006, 57, 140-148, <http://dx.doi.org/10.1016/j.porgcoat.2006.08.007>.
3. Kourkoulis, S., Z. Agioutantis, **S. Maurigiannakis** and E. Papatheodorou, Modeling three point bending of rock-type materials using an elastoplastic model with contact elements, Journal of the Mechanical Behavior of Materials, 2005, Vol. 16, Nos 1-2, 85-93, <http://dx.doi.org/10.1515/JMBM.2005.16.1-2.85>.
4. Agioutantis, Z., S. Kourkoulis, **S. Maurigiannakis** and E. Papatheodorou, Notched marble specimens under bending: Experimental study and numerical analysis using an elastoplastic model with contact elements, Journal of the Mechanical Behavior of Materials, 2005, Vol. 16, Nos 1-2, 1-8, <http://dx.doi.org/10.1515/JMBM.2005.16.1-2.1>
5. Maravelaki-Kalaitzaki, P., N. Kallithrakas-Kontos, Z. Agioutantis, **S. Maurigiannakis** and D. Korakaki, A comparative study of porous limestones treated with silicon-based strengthening agents, Progress in Organic Coatings, 2008, Volume 62, Issue 1, March, pp. 49-60, <http://dx.doi.org/10.1016/j.porgcoat.2007.09.020>
6. Kaklis, K., **S. Maurigiannakis**, Z. Agioutantis and C. Istantso, Investigation of the indirect tensile strength of transversely isotropic Dionysos marble using the three point bending test, Strain, 2009, Volume 45, Issue 5, October, pp. 393-399, <http://dx.doi.org/10.1111/j.1475-1305.2008.00560.x>

7. Agioutantis, Z., K. Kaklis, **S. Mavrigiannakis**, M. Verigakis, F. Vallianatos, V. Saltas, The potential of acoustic emissions from three point bending tests as rock failure precursors, *International Journal of Mining Science and Technology*, 2016, 26, 155-160, <http://dx.doi.org/10.1016/j.ijmst.2015.11.024>
8. Kaklis K., V. Saltas, **S. Mavrigiannakis**, F. Vallianatos, Z. Agioutantis, Using acoustic emissions to enhance fracture toughness calculations for CCNBD marble specimens, *Journal of Fracture and Structural Integrity*, 2017, 40, pp. 1-17, <http://dx.doi.org/10.3221/IGF-ESIS.40.01>
9. Kaklis, K., **S. Mavrigiannakis**, Z. Agioutantis, E.K. Steiakakis, F.K. Stathogianni, Experimental investigation of the mechanical properties of Alfas stone, *Journal of Fracture and Structural Integrity*, 2017, 40, pp. 18-31, <http://dx.doi.org/10.3221/IGF-ESIS.40.02>
10. Kaklis, K., **S. Mavrigiannakis**, Z. Agioutantis and P. Maravelaki-Kalaitzaki, Characterization of pozzolanic lime mortars used as filling material in shaped grooves for restoring member connections in ancient monuments, *International Journal of Architectural Heritage*, 2018, Vol. 12, Issue 1, pp. 75-90, <http://dx.doi.org/10.1080/15583058.2017.1377313>
11. Kaklis, K., Z. Agioutantis, **S. Mavrigiannakis** and P. Maravelaki-Kalaitzaki, On the experimental investigation of pozzolanic lime mortar stress-strain behavior and deformation characteristics when subjected to unloading-reloading cycles, *Procedia Structural Integrity*, 10 (2018) 129-134, <https://dx.doi.org/10.1016/j.prostr.2018.09.019>
12. Kaklis, K., Z. Agioutantis, **S. Mavrigiannakis**, P. Maravelaki-Kalaitzaki, A simplified damage evolution relationship and deformation characteristics of a pozzolanic lime mortar when subjected to unloading-reloading cycles in the pre-peak region, *Journal of Fracture and Structural Integrity*, 50, (2019), pp. 395-406, <https://dx.doi.org/10.3221/IGF-ESIS.50.33>
13. Nomikos, P., K. Kaklis, Z. Agioutantis, **S. Mavrigiannakis**, Experimental characterization and numerical modeling of the fracture process in banded Alfas porous stone, *Wiley Online Library*, (2020), <https://doi.org/10.1002/mdp2.165>

Conference Papers (full paper review)

14. Agioutantis, Z., **S. Mavrigiannakis** and C. Stiakakis, Modeling the uniaxial compression test in rocks: Comparison of different approaches, *Proceedings, 4th GRACM Congress on Computational Mechanics (GRACM 2002)*, Patras, Greece.
15. **Mavrigiannakis, S.**, Z. Agioutantis, P. Kokkiniotis and T. Kagiara, Suitability of artificial stone as building material: a sustainable development option for the construction industry, *Proceedings, International Conference on Sustainable Development Indicators in the Mineral Industry (SDIMI 2003)*, May 21-23, 2003, Milos, Greece, pp. 259-264, online access.
16. Kourkoulis, S.K., Z. Agioutantis, **S. Mavrigiannakis** and E. Papatheodorou, Experimental and Numerical Analysis of Notched Marble Beams Under Bending: An Elastic Transversely Isotropic Model, *Proceedings, International*

- Conference on Computational & Experimental Engineering & Sciences, July 24-29, 2003, Corfu, Greece.
17. Stavrakas, I., D. Triantis, Z. Agioutantis, **S. Maurigiannakis**, V. Saltas and F. Vallianatos, Pressure Stimulated Currents in rocks. Cross-correlation with mechanical properties, Proceedings, 1st International Conference on Advances in Mineral Resources Management and Environmental Geotechnology (AMIREG 2004), June 7-9, 2004, Hania, Greece, pp. 733-738, online access
 18. Agioutantis, Z., **S. Maurigiannakis**, P. Maravelaki-Kalaitzaki, Modeling the behavior of strengthening compounds on porous geomaterials, Proceedings, 7th National Congress on Mechanics, June 24-26, 2004, Hania, Greece, pp. 138-143.
 19. Maravelaki-Kalaitzaki P., Z Agioutantis, **S. Maurigiannakis**, N Kallithrakas-Kontos, "Evaluation of the effectiveness of silicone-based strengthening agents on porous limestones", Proceedings of the 10th International congress on Deterioration and Conservation of Stone, 27 June - 2 July 2004, Stockholm, Sweden, Vol. 1, pp 487-494.
 20. Mitritsakis, N., I Stavrakas, **S. Maurigiannakis**, C. Anastasiadis, D. Triantis and Z. Agioutantis, Investigation and quantification of damage in geomaterials with the technique of dielectric spectroscopy, Proceedings, 9th European Conference on Non-Destructive Testing, September 25-29, 2006, Berlin, paper no 317.
 21. Foscolos A.E. and **S. Maurigiannakis**, (2006), "Supply and demand of hydrocarbons - Trends and forecasts - Implications for power generation", 2nd International Conference on: "Advances in Mineral Resources Management and Environmental Geotechnology", Hania 2006, Greece.
 22. Markopoulos Th., Triantafyllou G. and **Mavrigiannakis S.**, "Composition of mortars of hydraulic lime that were produced by limestone raw material of Crete and control of their mechanic behaviour", 15o Congress of Concrete, October 25-27, Alexandroupoli, 2006, Volume C (page 492-499).
 23. Kaklis, K., Z. Agioutantis, G. Alevizos and **S. Maurigiannakis**, Microhardness Testing of Marbles and Correlation with Mechanical Properties, Proceedings, 8th HSTAM International Congress on Mechanics, Patras, July 12-14, 2007, pp. 601-606.
 24. Agioutantis, Z., P. Viopoulos and **S. Maurigiannakis**, Elastoplastic modeling of the chimney failure potential at the face of underground openings, Proceedings, 11th ACUUS Conference: Underground Space: Expanding the Frontiers, September 10-13, 2007, Athens, Greece, pp. 391-396.
 25. Agioutantis, Z., P. Viopoulos, H. Papantoni and **S. Maurigiannakis**, Numerical Modeling of Forepoling Applications in Tunnel Construction, Proceedings, Ecomining 2007, October 24-26, Sovata Romania, pp. 100-110.
 26. Kaklis, K., Z. Agioutantis, A. Vafidis, **S. Maurigiannakis**, M. Kouvelas and G. Feggos, Experimental characterization of the bioclastic Limestone of Alfas-Rethimnon, using laboratory and insitu testing, Proceedings, 1st Panhellenic Congress on Structural Materials, May 21-23, 2008, Athens, Greece, pp. 1075-1084, (in Greek).

27. Stavrakas, I., C. Anastasiadis, **S. Maurigiannakis**, D. Triantis and Z. Agioutantis, Permittivity variations on marble beams subjected to various loading levels, Proceedings, 10th International Conference of the Slovenian Society for Non-Destructive Testing, Application of Contemporary Non-Destructive Testing in Engineering, September 1-3, 2009, Ljubljana, Slovenia.
28. Deák, Gy., Št. Deák, Z. Agioutantis and **S. Mavrigiannakis**, Assessment of Rock Salt Micro-Properties Using PFC-2D Modeling, Proceedings, Ecomining 2009, September 4-5, 2009, Milos, Greece, pp.126-134.
29. Agioutantis, Z., N. Gouveris, Ch. Steiakakis, P. Viopoulos and **S. Maurigiannakis**, Thermo-mechanical simulation of monolithic concrete lining of an underground opening, Proceedings, 9th HSTAM International Congress on Mechanics, July 12-14, 2010, Limassol, Cyprus.
30. Paganis, L.K, Z. Agioutantis, **S. Maurigiannakis** and S. Steiakakis, An investigation of the mechanical behavior of fiber concrete and potential applications to the support of underground excavations, Proceedings, 6th Panhellenic Conference on Geotechnics and Geoenvironmental Engineering, September 29 - October 1, 2010, Volos, Greece, 457-464 (in Greek).
31. Agioutantis Z., **S. Maurigiannakis** and A. Athousaki, Best practices in quarrying, Proceedings, 1st International Conference on SARM, September 20-21, 2011, Ljubljana, Slovenia.
32. Kaklis K., **S. Maurigiannakis** and Z. Agioutantis, Comparison of acoustic signatures of rock specimens under uniaxial compression, Proceedings, International Conference on Computational & Experimental Engineering and Sciences (ICCES'12), April 30 - May 4, 2012, Crete, Greece.
33. Maravelaki-Kalaitzaki P., E. Lionakis, Z. Agioutantis, C. Kapridaki, A. Verganelaki, **S. Mayrigianakis**, M. Stavroulaki, V. Perdikatsis and N. Kallithrakas-Kontos, "Physico-chemical and Mechanical Characterization of Hydraulic Mortars Containing Nano-Titania for Restoration Applications", NICOM 4: 4th International Symposium on Nanotechnology in Construction, May 20-22, 2012, Agios Nikolaos, Greece.
34. Kaklis K., **S. Maurigiannakis**, Z. Agioutantis, F. Stathogianni and E. Steiakakis, Experimental Investigation of the Size Effect on the Mechanical Properties on two Natural Building Stones, Proceedings, 8th GRACM International Congress on Computational Mechanics, 12 July - 15 July 2015, Volos, Greece, [online access](#)
35. Kaklis, K., Z. Agioutantis and **S. Mavrigiannakis**, Experimental determination of the indirect tensile strength parameters for Dionysos marble, Proceedings, 50th US Rock Mechanics / Geomechanics Symposium, ARMA 2016, June 26-30, Houston, TX, paper 16-811, [online access](#)

Conference Presentations / Posters (reviewed by abstract)

36. Tsoutrelis, H., **S. Maurigiannakis** and V. Roumpos, "Effectiveness of the Swellex rock reinforcement system in the Madem Lakkos and Olympias mines", 3rd National Congress of Mineral Wealth, Athens, 22-24 November, 2000 (in Greek).

37. Kourkoulis, S., Z. Agioutantis, **S. Maurigiannakis** and E. Papatheodorou, Modeling three point bending of rock-type materials using an elastoplastic model with contact elements, 5th EuroMech Solid Mechanics Conference, 17-22 August, 2003, Thessaloniki, Greece (abstract and presentation, full paper published in the IJ of Mechanical Behavior of Materials in 2005).
38. Agioutantis, Z., S. Kourkoulis, **S. Maurigiannakis** and E. Papatheodorou, Notched marble specimens under bending: Experimental study and numerical analysis using an elastoplastic model with contact elements, 5th EuroMech Solid Mechanics Conference, 17-22 August 2003, Thessaloniki, Greece (abstract and presentation, full paper published in the IJ of Mechanical Behavior of Materials in 2005).
39. Kaklis, K., **S. Maurigiannakis**, Z. Agioutantis and C. Istantso, Investigation of the Indirect Tensile Strength of Transversely Isotropic Dionysos Marble using the Three Point Bending Test, Proceedings, 13th International Conference on Experimental Mechanics, Experimental Analysis of Nano and Engineering Materials and Structures (ICEM13), Alexandroupolis, Greece, July 1-6, 2007 (extended abstract and presentation, full paper was published in Strain).
40. Agioutantis, Z., S. Agalaniotou, **S. Mavrigiannakis** and K.N. Kaklis, The Mechanical Properties of Pozzolan Lime Mortars Used as Filler Material in the Restoration of Ancient Monuments, Proceedings, 8th GRACM International Congress on Computational Mechanics, July 12-15, 2015, Volos, Greece, online access
41. Agioutantis, Z., K. Kaklis, **S. Mavrigiannakis**, M. Verigakis, F. Vallianatos, V. Saltas, The Potential of Acoustic Emissions from Three Point Bending Tests as Rock Failure Precursors, Proceedings, 34th International Conference on Ground Control, July 28-30, 2015, Morgantown, WV, pp. 323-329, online access
42. Kaklis, K., **S. Mavrigiannakis**, V. Saltas, A. Daskalaki, F. Valianatos, Z. Agioutantis, Determination of Fracture Loads for Mode I Fracture Toughness Calculations for CCNBD Marble Specimens by Acoustic Emission Signals, SCiNTE 2015, October, 2015, Athens, Greece (extended abstract and poster).
43. Kaklis, K., Z. Agioutantis and **S. Mavrigiannakis**, Experimental determination of the indirect tensile strength parameters for Dionysos marble, Proceedings, 50th US Rock Mechanics / Geomechanics Symposium, ARMA 2016, June 26-30, Houston, TX, paper 16-811, online access
44. Kaklis, K., Z. Agioutantis, **S. Mavrigiannakis** and P. Maravelaki-Kalaitzaki, On the experimental investigation of pozzolan lime mortar stress-strain behavior and deformation characteristics when subjected to cyclic loading, Proceedings, 1st International Conference of the Greek Society of Experimental Mechanics of Materials, 10 - 12 May 2018, Athens, Greece (extended abstract and presentation, full paper published in Procedia Structural Integrity) online access to book of abstracts.
45. Kaklis, K., Z. Agioutantis, **S. Mavrigiannakis** and P. Maravelaki-Kalaitzaki, On the experimental investigation of pozzolan lime mortar stress-strain behavior and deformation characteristics when subjected to cyclic loading, Proceedings, 1st International Conference of the Greek Society of Experimental Mechanics of Materials, 10 - 12 May 2018, Athens, Greece

- (extended abstract and presentation, full paper published in Procedia Structural Integrity) online access to book of abstracts.
46. Exadaktylos G., G. Alevizos, P. Liolios and **S. Mavrigiannakis**, “Microstructural and mechanical characterization of two marbles in a folded geological setting”, 1st Conference of the Greek Societe of experimental mechanics of materials, Athens, Greece, May 10-12, 2018.
 47. Kaklis, K., Z. Agioutantis, **S.P. Mavrigiannakis** and P.P. Nomikos, A Multi-Stage Triaxial Test for Cemented Paste Backfill, Proceedings, 52nd US Rock Mechanics/Geomechanics Symposium (ARMA), 17-20 June 2018, Seattle, WA, paper 18-526, online access.

Book Chapters and Papers in Honorary Volumes

48. Kaklis, K., **S. Maurigiannakis**, Z. Agioutantis and G. Bazdanis, An investigation of the mechanical characteristics of Nestos Marble, Chapter, Volume in Honor of the late Professor K. Kavouridis, Technical University of Crete Publications, 2010, pp. 57-68 (in Greek).