

Curriculum Vitae

Panos Papanastasiou
Professor, Department of Civil and Environmental Engineering
University of Cyprus

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<http://www.ucy.ac.cy/energygeomechanics/>

AREAS OF SPECIALISATION

Applied and Computational Mechanics: continuum mechanics, constitutive modelling, mechanics of cohesive-frictional materials, micromechanics, fracture mechanics, flow in porous media, finite element analysis

Energy and Energy Transition: Petroleum Geomechanics which includes problems on wellbore stability, hydraulic fracturing, sanding prediction and control, reservoir Geomechanics, CO₂ geological storage, geothermal systems, cracking of photovoltaics

Energy Project Management: in upstream exploration and production, hydrocarbon management institutions, law, regulations and fiscal systems for hydrocarbon, production sharing contract, monetization of natural gas, and energy outlook.

Ground Engineering: soil mechanics and foundation engineering, environmental geomechanics

EDUCATION

9/86-10/90 **Doctor of Philosophy** in Civil Engineering (Computational Geomechanics), University of Minnesota, Minneapolis, MN. Thesis: *Numerical analysis of localisation phenomena with application in deep boreholes*

3/85-9/86 **Master of Science** in Civil Engineering (Soil Mechanics), University of Minnesota, Minneapolis, MN. Thesis: *Passive earth pressure and bearing capacity computations*

9/79-7/84 **Diploma in Civil Engineering** (Structures, 5 year course), National Technical University of Athens, Greece. Thesis: *Non-linear elastic stability analysis of steel frames*

EMPLOYMENT HISTORY

11/06 –to date **Professor**, Department of Civil and Environmental Engineering, University of Cyprus

12/08 – 12/14 **Dean**, Engineering School, University of Cyprus

09/05 –12/08 **Head**, Department of Civil and Environmental Engineering, University of Cyprus

6/02-8/05 **Interim Head**, Department of Civil and Environmental Engineering, University of Cyprus

8/04 – 9/06 to date **Interim Head** of the program of Architecture, University of Cyprus

6/02 – 10/06 **Associate Professor**, Department of Civil and Environmental Engineering, University of Cyprus
1/99-12/02 **Principal Research Scientist**, Schlumberger Cambridge Research, U.K.
1/92- 12/98 **Senior Research Scientist**, Schlumberger Cambridge Research, U.K.
1/91-1/92 **Research Scientist**, Schlumberger Cambridge Research, U.K.
3/85-10/90 **Research Assistant**, Department of Civil Engineering, University of Minnesota.
3/85-10/89 **Teaching Assistant**, Department of Civil Engineering, University of Minnesota.

INDUSTRIAL and OTHER CONSULTING

3/19-present, Board of Directors of Cyprus hydrocarbon Company (CHC)
11/17-present, Advisor to the Cyprus Government on Gas & Oil Exploration/Exploitation
1/05-12/07, Schlumberger Moscow Research, Russia
1/03-12/04, Schlumberger Cambridge Research, U.K

COURSES DEVELOPED AND TAUGHT

Undergraduate studies

CEE100: Introduction to Civil Engineering (Fall 2003)
CEE131: Mechanics-Statics (Winter 2004)
CEE230: Strength of Materials (Fall 2004)
CEE251: Soil Mechanics (Winter 2005-2014, 2016-present)
CEE253: Soil Mechanics Lab (Winter 2016)
CEE353: Foundation Engineering (Winter 2006-2014)
CEE450: Geomechanics (2016-present)

Graduate studies

CEE557: Environmental Geotechnics (Fall 2005, 2015-18,)
CEE535: Plasticity Theory (Fall 2016, 2017)
CEE557: Offshore Geotechnics (2016, 2020)
PET 501: Introduction to Petroleum Engineering (Fall 2013)
PET 522: Well Completions (Spring 2014)
PET 532: Natural Gas (Spring 2014)
PET 551: Field Development Plan (Summer 2014)
CEE 557: Offshore and Coastal Geotechnics (Winter 2016)

AFFILIATIONS

Society of Petroleum Engineers (SPE)
British Geotechnical Society (BGS, Institution of Civil Engineers)
European Mechanics Society (EUROMECH)
Engineering Mechanics Institute (ASCE)
International Society for Rock Mechanics (ISRM)
International Association for Computer Methods and Advances in Geomechanics (IACMAG)
Greek Association for Computational Mechanics (GRACM, Greece)
Hellenic Association of Theoretical and Applied Mechanics (Greece)
Scientific and Technical Chamber of Engineers, Cyprus
Association of Civil Engineers, Cyprus

SERVICE

Professional Organizations:

Associate Editor for Rock Mechanics and Rock Engineering journal (Springer)
Editorial Board for Geomechanics for Energy and the Environment journal (Elsevier)
Editorial Board Petroleum Science (Springer Open), Editorial Advisor for International Journal of Geomechanics, ASCE,
<http://www.pubs.asce.org/journals/edgm.html>
Editorial Board for Petroleum Science, China, Springer Open
Editorial Board of Rock Mechanics and Rock Engineering Journal (Springer)
Board of directors of International Association for Computer Methods and Advances in Geomechanics.
Member of Engineering and Physical Sciences Research Council (EPSRC) peer review college (U.K.).
Member of the referees' panel for Research Grants Council (RGC) of Hong Kong.
Reviewer for European Sciences Foundation (ESF)

Journal Reviewer

International Journal for Numerical and Analytical Methods in Geomechanics
International Journal for Numerical Methods in Engineering
International Journal of Fracture
Soil Dynamics and Earthquake Engineering
International Journal of Plasticity
International Journal of Geomechanics (ASCE)
Journal of Engineering Mechanics
Computer Methods in Applied Mechanics and Engineering
International Journal of Pressure Vessels and Piping
Transport in Porous Media
International Journal of Solids and Structures
International Journal Structural Engineering and Mechanics
Computers and Structures
International Journal of Rock Mechanics and Mining Sciences
Structural Engineering and Mechanics
Steel and Composite Structures
Journal of Petroleum Science and Engineering
SPE Journals
Journal of Natural Gas
Geomechanics for Energy and the Environment

Conferences organization and Committees:

Chairman DynaMat 2019, 13th Workshop of Dynamic Behaviour of Materials and its Applications in Industrial Processes, 17-19 April, 2019, Nicosia, Cyprus.
ECCM-ECFD 2018 Mini-symposium on Benchmarking hydraulic fracturing: theory and numerical simulation. Organized by Lorenzo Benedetti, Brice Lecampion, Panos Papanastasiou and Gennady Mishuris, Glasgow, UK.
Chairman 12th Workshop of the International Lithosphere Program ILP-Task Force on Sedimentary Basins, Limassol Cyprus, 29 October-3 November, 2017.
Chairman 11th International Workshop on Bifurcation and Degradation in Geomaterials, Limassol, Cyprus, 21-25 May 2017.

Chairman, Workshop on Hydrocarbon Exploration and Production Offshore HSE (Health, Safety, Environment), University of Cyprus, Nicosia, 25 April 2014

Chairman of the 10th Hydraulic Fracturing Summit, Limassol, Cyprus, 15-18 July 2010.

Chairman of the Vardoulakis mini-symposia at the 9th HSTAM International Congress on Mechanics, Limassol, Cyprus, 12-14 July 2010. <http://cyprusconferences.org/hstam2010/>

Chairman of the 9th HSTAM International Congress on Mechanics, Limassol, Cyprus, 12-14 July 2010. <http://cyprusconferences.org/hstam2010/>

Co-Chairman of the 5th International Congress on Computational Mechanics, Nicosia, Cyprus, 2005. <http://www.ucy.ac.cy/~gracm05/index.htm>

The 10th International Conference on Computer Methods on Geomechanics. (IAGMAG) (also organized a session on petroleum geomechanics in the 10th IACMAG, coordinator of a panel discussion on petroleum geomechanics in 10th IACMAG), The University of Arizona, 2001.

The 11th International Conference on Computer Methods on Geomechanics. (IAGMAG), Torino, 2005.

The 7th International Workshop on Bifurcations, Instabilities and Degradation in Geomechanics, 2005, Chania, Greece.

The 2nd International Congress on non-smooth non-convex mechanics with applications in Engineering, 2006, Thessaloniki Greece

The 12th International Conference on Computer Methods on Geomechanics. (IAGMAG), India, 2008.

The 13th International Conference on Computer Methods on Geomechanics. (IAGMAG), Melbourne, Australia 2011.

Organizing Committee of the Levant Energy Forum, 23 June, 2011, Nicosia, Cyprus

Organizing Committee of the Levant Energy Forum, 26 June, 2012, Nicosia, Cyprus

SPE, North Africa Technical Conference and Exhibition, 20-22 February 2012, Cairo, Egypt, Society of Petroleum Engineers.

SPE, North Africa Technical Conference and Exhibition, 15-17 April, 2013, Cairo, Egypt, Society of Petroleum Engineers.

Chairman, workshop on Developing the Oil & gas sector – Focusing on Education, Organized by the University of Cyprus and British Council, Nicosia 9 May 2013.

The 14th International Conference on Computer Methods on Geomechanics. (IAGMAG), Kyoto, Japan, 2014.

The 7th International Petroleum Technology Conference (IPTC), Doha, Qatar, 20-22 January 2014.

University of Cyprus Senate House Committees

University Senate (November 2007-to date)

Finance and Personnel (January 2009-to date)

University Development (2006-to date)

Students Housing (chairperson, 2003-2007)

University Buildings Organization and Development (vice-chairperson 2002-2005)

Library Committee (2002-2003)

Health and Safety Committee (2002-2003)

Other Committees

Research Platform for Structures, Scientific and Technical Chamber of Cyprus, member of the Steering Committee, Chairperson of the Energy in Structures group (2007-

Academic Program Evaluation for Frederic Institute of Technology (2005 SEKAP, Ministry of Education)

Academic Degree Accreditation (2005- to date, chairman of Evaluation Committees
KYSATS Ministry of Education)
Assessment of Environmental projects (Ministry of Agriculture and Environment, Cyprus,
2004-2005)
School Building Committee (Ministry of Education, 2005-present)
Research and Development in Cyprus, Scientific and Technical Chamber of Cyprus, 2005-
present
The design of an Ideal House in Cyprus, an Architectural competition by the Scientific and
Technical Chamber of Cyprus, 2006.

PH.D STUDENTS

Present

Aikaterini Triantafyllaki (structural integrity of offshore pipelines)
Nicolas Markou (Reservoir geomechanics)
Lamprini Papargyri (Cracking of Photovoltaics)
Kyriacos Patsalides (Cavity stability)

Graduated

A. Zervos (Modelling of progressive localization with gradient elastoplasticity, co-advising
with I. Vardoulakis 2001, present position Senior Lecturer at the University of
Southampton)
M. Stavropoulou (Coupled Hydromechanical instabilities in porous geomaterials, co-
advising with I. Vardoulakis, 1996, present position Assistant Professor at the University of
Athens)
E. Sarris, Modelling of Fluid-Driven Fractures in Cohesive Poroelastoplastic formations,
2011, present position Assistant Professor at the University of Nicosia)

External examination committees

C.T. Davie (Glasgow University, 2001)
R.G. van de Ketterij (Delft University, 2001),
T.P. Lhomme (Delft University, 2005),
Y. Dong (Delft University, 2010)
Daniel Garolera (UPC, Barcelona, Spain, 2017)
Adrià Pérez Carreras (UPC, Barcelona, Spain, 2018)
Sohrab Gheibi (NTNU, Norway, 2018)
Mats Rongved (NTNU, Norway, 2019)

MASTER STUDENTS

I. Sophos (2010), St. Zervos (2010), M. Alexi (2011), St. Alkibiadou (2011), Sophokleous
V. (2011, MEng), N. Nicolaou (2013), A. Patsalosavvis (2013), Ch. Hatzipieri (2013), A.
Kyriacou (2014), Karousiou M. (2017, MEng), Yiangou I (2017, MEng) Evaggelou I (2018,
MEng), Hadjicosta M (2018, MEng), Kouloumi M (2018, MEng), Koutra P (2018, Meng),
Mina K (2018, MEng), Christodoulou K. (2019, Meng), Gerolemou M.(2019 MEng), Savva
E. (2019, MEng), Stylianou M. (2019, MEng), Andreou E. (2019), Frixoy F.(2019)

SUMMARY OF PUBLICATIONS

Patents: 3
5

Journal papers:	70
Conferences papers:	90
Book chapters:	8
Edited books:	6
Other presentations-Lectures:	31
Industrial reports (confidential)	48

Publication List

Journal Papers

- [J1] Vardoulakis I. and Papanastasiou P. Bifurcation analysis of deep boreholes: I. Surface Instabilities. *Int. J. Num. Anal. Meth. Geomech.*, v.12, pp.379-399 (1988).
- [J2] Papanastasiou P. and Vardoulakis I. Bifurcation analysis of deep boreholes: II. Scale effect. *Int. J. Num. Anal. Meth. Geomech.*, v.13, pp.183-198 (1989).
- [J3] Papanastasiou P. and Vardoulakis I. Numerical treatment of progressive localization in relation to borehole stability. *Int. J. Num. Anal. Meth. Geomech.*, v.16, pp.389-424, (1992).
- [J4] Vardoulakis I, Shah K.R. and Papanastasiou P. Modelling of tool-rock shear interfaces using gradient-dependent flow theory of plasticity. *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, v.29 (6), pp.573-582, (1992).
- [J5] Papanastasiou P. and Thiercelin M. Influence of inelastic rock behaviour in hydraulic fracturing. *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, v.30 (7), pp.1241-1247, (1993).
- [J6] Desroches J., Lenoach B., Papanastasiou P. and Thiercelin M. On the modelling of near tip processes in hydraulic fracturing. *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, v.30 (7), pp. 1127-1134 (1993).
- [J7] Desroches J., Detournay E., Lenoach B., Papanastasiou P., J.R.A. Pearson, Thiercelin M. and Cheng A. The crack tip region in hydraulic fracturing. *Proc. R. Soc. Lond. A.*, 447, pp.39-48, (1994).
- [J8] Vardoulakis I., Stavropoulou M. and Papanastasiou P. Hydro-mechanical aspects of Sand production problem. *Transport in Porous Media*, v.22, pp.225-244, (1996).
- [J9] Papanastasiou P and Durban D. Elastoplastic analysis of cylindrical cavity problems in geomaterials. *Int. J. Num. Anal. Meth. Geomech.*, v.21, pp.133-149, (1997).
- [J10] Papanastasiou P. A coupled elastoplastic hydraulic fracturing model. *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, v.34 (3-4), No.00240, (1997).
- [J11] Plona T., Winkler K., D'Angelo R., Sinha B., Papanastasiou P. and Cook J. Acoustic detection of stress-induced effects around a borehole. *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, v.34 (3-4), No.00290, (1997).
- [J12] Durban D. and Papanastasiou P. Cylindrical cavity expansion and contraction in pressure sensitive geomaterials. *Acta Mechanica*, 122, pp.99-122, (1997).
- [J13] Papanastasiou P. The influence of plasticity in hydraulic fracturing. *Int. J. Fracture*, 84, pp.61-79, (1997).
- [J14] Durban D. and Papanastasiou P. Elastoplastic response of pressure sensitive solids. *Int. J. Numer. Anal. Meth. Geomech.*, v.21, pp.423-441, (1997).

- [J15] Stavropoulou M., Papanastasiou P. and Vardoulakis I. Coupled wellbore erosion and stability analysis. *Int. J. Numer. Anal. Meth. Geomech.*, 22, pp.749-769, (1998).
- [J16] Papanastasiou P. and Zervos A. Stability of perforations near hydraulic fractures. *Int. J. Rock Mech. Min. Sci.*, v.35 (4-5), No.91, (1998).
- [J17] Papanastasiou P. and Durban D. Bifurcation of elastoplastic pressure sensitive hollow cylinders. *ASME J. Applied Mech.*, 66, pp.117-123, (1999).
- [J18] Papanastasiou P. The effective fracture toughness in hydraulic fracturing. *Int. J. Fracture*, 96, pp.127-147 (1999).
- [J19] Sinha B., Papanastasiou P. and Plona T. Influence of plastic yielding and over-pressure on borehole Stoneley and flexural dispersions. *J. Geophysical Research*, 104, No B, pp.15451-15459 (1999).
- [J20] Papanastasiou P. An efficient algorithm for propagating fluid-driven fractures. *Computational Mechanics J.*, 24, pp.258-267, (1999).
- [J21] Papanastasiou P. Formation stability after hydraulic fracturing. *Int. J. Numer. Anal. Meth. Geomech.*, 23, pp.1927-1944, (1999).
- [J22] Papanastasiou P. and Atkinson C. Representation of crack-tip plasticity in pressure-sensitive geomaterials. *Int. J. Fracture*, 102, pp.271-286, (2000).
- [J23] Papanastasiou P. Hydraulic fracture closure in pressure-sensitive elastoplastic medium. *Int. J. Fracture*, 103, pp.149-161, (2000).
- [J24] Durban D. and Papanastasiou P. Plastic bifurcation in the triaxial confining pressure test. *ASME J. Applied Mech.*, 67, pp.552-557, (2000).
- [J25] Papanastasiou P. Localization of deformation and failure around elliptical perforations based on a polar continuum. *Computational Mechanics J.*, 26, pp.352-361, (2000).
- [J26] Papanastasiou P and Durban D. Singular plastic fields in non-associative pressure sensitive solids. *Int. J. Solids Struct.*, 38, pp.1539-1550, (2001).
- [J27] Zervos A., Papanastasiou P. and Vardoulakis I. A finite element displacement formulation for gradient elastoplasticity. *Int. J. Num. Methods Engng*, 50, pp.1369-1388, (2001).
- [J28] Zervos A., Papanastasiou P. and Vardoulakis I. Modelling of localization and scale effect in thick-walled cylinders with gradient elastoplasticity. *Int. J. Solids Struct.*, 38, pp.5081-5095, (2001).
- [J29] Vardoulakis I. and Papanastasiou P. and Stavropoulou M. Sand erosion in axial flow conditions. *Transport in Porous Media*, 45, pp.267-281, (2001).
- [J30] van Dam D.B., Papanastasiou P, de Pater C.J. Impact of rock plasticity on hydraulic fracture propagation and closure. *J. SPE Production & Facilities*, 17 (3), pp.149-159, (2002).
- [J31] Papanastasiou P, Durban D and Lenoach B. Singular plastic fields in wedge indentation in non-associative, pressure-sensitive solids. *Int. J. Solids Struct.*, 40, pp.2521-2534, (2003).
- [J32] Durban D. and Papanastasiou P. Singular crack-tip fields for pressure sensitive Solids. *Int. J. Fracture*, 119, pp.47-63, (2003).
- [J33] Papanastasiou P and Zervos A. Wellbore Stability: from linear elasticity to post-bifurcation modeling, *ASCE Int. J. Geomech*, 4(1), pp.2-12, (2004).

- [J34] Garolera, D. , Lopez , C.M., Carol , I. , Papanastasiou, P. Micromechanical Analysis of the Rock Sanding Problem. *Journal of the Mechanical Behavior of Materials*. Volume 16, Issue 1-2, Pages 45–54 (2005), ISSN (Online) 2191-0243, ISSN (Print) 0334-8938, DOI: 10.1515/JMBM.2005.16.1-2.45
- [J35] Papanastasiou P. and Atkinson C. Representation of crack-tip plasticity in pressure-sensitive geomaterials: Large scale yielding, *Int. J. Fracture*, 139, pp.137-144, (2006).
- [J36] Papanastasiou P. et al. Stability of a multilateral junction: experimental results and numerical modelling. *J. SPE Drilling and Completion*, pp. 4-11, March, (2006).
- [J37] Papanastasiou P. Hydraulic Fracturing: Computational modelling. *Geomechanics in Energy Production, Journal "Revue Europeenne de Genie Civil"*, 829-848, (2006).
- [J38] Zervos A., Vardoulakis I. and Papanastasiou P. The influence of non-associativity on localization and failure in some geomechanics problems based on gradient elastoplasticity. *ASCE Int. J. Geomechanics*, 7(1), pp.63-74, (2007).
- [J39] Zervos A., Papanastasiou P and Vardoulakis I. Shear localisation in thick-walled cylinders under internal pressure based on Gradient Elastoplasticity, *Journal of Theoretical and Applied Mechanics*, 38, 81-100, (2008).
- [J40] Papanastasiou P. Computational post failure analysis with Cosserat continuum, *European J. Environmental and Civil Engineering*, "[European Journal of Environmental and Civil Engineering](#) 14 (1-10), pp. 1051-1065 , (2010)
- [J41] Zervos A., Papanastasiou P. Computational post-failure analysis with a second gradient theory: Gradient Elastoplasticity, [European Journal of Environmental and Civil Engineering](#) 14 (1-10) , pp. 1067-1079 , (2010)
- [J42] Papanastasiou, P.,Kyriakides St. In Memoriam Ioannis Vardoulakis (1949–2009), *International Journal of Solids and Structures* 47 (2010) 537–538
- [J43] Sarris E., Papanastasiou P. The influence of the cohesive process zone in hydraulic fracturing, *Int. J Fracture*, 167, 33-45 (2011).
- [J44] Papanastasiou P. and Thiercelin M. Modelling borehole collapse with capability of predicting the scale effect. *ASCE Int. J. Geomech*, 11(4), 286-293 (2011).
- [J45] Sarris E., Papanastasiou P. Modelling of hydraulic fracturing in a poroelastic cohesive formation. *ASCE, Int. J. Geomech.* 12(2), (2012).
- [J46] Sarris E., Papanastasiou P. Numerical Modelling of Fluid-Driven Fractures in Cohesive Poro-elastoplastic Continuum, *Int. J. Num. Anal. Methods Geomechanics*, 37 (12), 1822-1846 (2013)
- [J47] Vavourakis V, Loukidis D, Charmpis D., Papanastasiou P. A robust finite element approach for large deformation elastoplastic plane-strain problems, *Finite Elements in Analysis and Design*, 77, 1–15, (2013)
- [J48] Vavourakis V, Loukidis D, Charmpis D., Papanastasiou P. Assessment of remeshing and remapping strategies for large deformation elastoplastic Finite Element analysis, *Elsevier Computers & Structures*, Vol. 114-115, 133-146 (2013).
- [J49] Sarris E., Gravanis, E., Papanastasiou P., Investigation of self-similar interface evolution in carbon dioxide sequestration in saline aquifers, *Transp. Porous Med.*, 103, 341–359 (2014).
- [J50] Sarris E., Papanastasiou P. The influence of pumping parameters in hydraulic fracturing. *Int. J. Num. Anal. Methods Geomechanics*, 39, 635-654, (2015)

- [J51] Gravanis E., Sarris E., Papanastasiou P., Hydro-Mechanical Erosion Models for Sand Production, *Int. J. Num. Anal. Meth. Geomech.*, 39, 2017-2036 (2015)
- [J52] Atkinson C., Sarris E., Gravanis E., Papanastasiou P., On Certain Singular Integral Equations Arising in the Analysis of Wellbore Recharge in Anisotropic Formations, *Appl. Math. Modell.* 40, 343-362 (2016).
- [J53] Papanastasiou P, Papamichos E and Atkinson C. On the Risk of Hydraulic Fracturing in CO2 Geological Storage, *Int. J. Num. Anal. Meth. Geomech.* 40, 1472-1484 (2016).
- [J54] Papanastasiou P, Sarris E., Kyriakou A. Constraining the in-situ stresses in a tectonically active offshore basin in eastern Mediterranean, *J. Petrol. Sc. Eng.*, 149, 208-217, (2017).
- [J55] Papanastasiou P. Durban D. Singular crack-tip plastic fields in Tresca and Mohr-Coulomb solids. *Int. J. Solids Struct.*, 136-137, 250-258, (2018).
- [J56] Papanastasiou P. Durban D. The influence of crack-face normal and shear loading on hydraulic-tip singular plastic fields, *Rock Mech. Rock Eng.* (2018) 51: 3191. <https://doi.org/10.1007/s00603-018-1437-x>
- [J57] Markou N., Papanastasiou P. Petroleum Geomechanics in the Eastern Mediterranean basin: Analysis and application of fault stress mechanics, *Oil Gas Sci. Technol. – Rev. IFP Energies nouvelles*, 73 (2018) 57, DOI: <https://doi.org/10.2516/ogst/2018034>
- [J58] Garolera D, Carol I, Papanastasiou P. Micromechanical analysis of sand production. *Int J Numer Anal Methods Geomech.* 43:1207–1229 (2019). <https://doi.org/10.1002/nag.2892>
- [J59] Patsalides K., Papanastasiou P. The influence of hardening and softening on the limit pressure of cylindrical cavity expansion, *ASCE Int. J. Geomech.*, 2019, 19 (4), 0401911 [https://doi.org/10.1061/\(ASCE\)GM.1943-5622.0001366](https://doi.org/10.1061/(ASCE)GM.1943-5622.0001366)
- [J60] Papargyri L., Theristis M., Kubicek B., Krametz Th, Mayr Chr. Papanastasiou P., Georghiou G.E. Modelling and experimental investigations of microcracks in crystalline silicon photovoltaics: A review. *Renewable Energy*, 145, 2387-2408, 2020. <https://doi.org/10.1016/j.renene.2019.07.138>
- [J61] Wrobel M., Piccolroaz A., Papanastasiou P., Mishuris G, Redirection of a crack driven by viscous fluid taking into account plastic effects in the process zone, *Geomechanics for Energy and the Environment*, Available online 2 September 2019, 100147, in Press, <https://doi.org/10.1016/j.gete.2019.100147>
- [J62] Garolera D, Carol I, Papanastasiou P (2020). Applications of zero-thickness interface elements for sand production prediction analysis. *Journal of Petroleum Science and Engineering, Journal of Petroleum engineering and Sciences*, 190, 107052 <https://doi.org/10.1016/j.petrol.2020.107052>
- [J63] Stylianou M., Christou A., Dalias P., Polycarpou P., Michael C., Agapiou A., Papanastasiou P, Fatta-Kassinou D. (2020). Physicochemical and structural characterization of biochar derived from the pyrolysis of biosolids, cattle manure and spent coffee grounds, *Journal of the Energy Institute (Elsevier)*, <https://doi.org/10.1016/j.joei.2020.05.002>
- [J64] Triantafyllaki Ai, Papanastasiou P., Loukidis D. Numerical analysis of structural response of unburied offshore pipelines crossing active normal and reverse faults. *Soil Dynamics and Earthquake Engineering*, 137, (2020) 106296, <https://doi.org/10.1016/j.soildyn.2020.106296>
- [J65] Stylianou M., Panagiotou C. F., Andreou E., Frixou F., Christou A., Papanastasiou P. Assessing the influence of biochars on the hydraulic properties of a loamy sand soil, *Biomass Conversion and Biorefinery*, Nov 2020, <https://doi.org/10.1007/s13399-020-01114-0>

- [J66] Wrobel M, Mishuris G, Papanastasiou P. (2021) On the influence of fluid rheology on hydraulic fracture, *International Journal of Engineering Science* 158, 103426, <https://doi.org/10.1016/j.ijengsci.2020.103426>
- [J67] Papanastasiou P. Editor's Highlight: Mechanical behaviour of carbonate reservoirs with single karst cavities. By Pedro A.L.P. Firme, Roberto J. Quevedo, Deane Roehl, Leonardo C. Pereira, Caroline L. Cazarin: *Geomechanics for Energy and the Environment*, Vol 25 (2021) 100209, <https://doi.org/10.1016/j.gete.2020.100225>
- [68] Markou N., Papanastasiou P. (2021) Geomechanics in depleted reservoirs, *Energies* 14 (1), 60, <https://doi.org/10.3390/en14010060>

Patents

- [P1] Papanastasiou P. 'Cavity stability prediction method for wellbores', *UK Patent No. GB 2 351 350*, date of disclosure: 2 December 1998, USA7066019, Date of Patent: June 27, 2006.
- [P2] Guinot F, James S., Grove B., Papanastasiou P. 'Optimum Perforation Design to Minimize Sand Intrusion' , *USA Serial No. 09/321040*, date of disclosure: 27 May 1999, USA, Patent number: 6283214, Date of Patent: September 4, 2001.
- [P3] Papanastasiou P. 'Wellbore perforation method and apparatus ' *GB Patent No 9926798.1*, date of disclosure: 24 September 1999. USA Patent number: 6401818, Date of Patent: June 11, 2002

Edited Books

- [E1] Papanastasiou P. (Editor). Special issue on Petroleum Geomechanics, *ASCE Int. J. Geomechanics*, 4 (1), 2004, ISSN 1532-3641.
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