



Dr Ioannis Papanikolaou

Current Position: Associate Professor of Structural Geology, Geoenvironment and Natural Hazards, **Director of the Mineralogy-Geology Laboratory**, Department of Natural Resources and Agricultural Engineering, Agricultural University of Athens, Greece.

Scientific Interests: Natural hazards, Environmental Geology, Earthquake Geology, Structural Geology, Catastrophe risk, soil erosion

Positions of responsibility – Appointed memberships

Msc Director of the Postgraduate Program «**Environmental Planning for Infrastructure Works and Prevention of Natural Hazards**» of the Department of Natural Resources and Agricultural Engineering.

Leader of the INQUA Focus Group on "Earthquake Geology and Seismic Hazards" (2016-2019) with approx. 620 members from 58 countries worldwide. INQUA is the International Union for Quaternary Research, founded in 1928.

Appointed twice (in 2013 and 2016) as an **Academic Member and Topic Owner of Catastrophe Risk of the Insurance and Reinsurance Stakeholder Group at EIOPA** (European Insurance and Occupational Pensions Authority) based in Frankfurt (served during 2013-2018).

Appointed (in April of 2017) from the Chair of EIOPA as an academic member of the Catastrophe Risk Workstream for the SCR (Solvency Capital Requirement) review Project and the recalibration of the Standard Formula.

Member of the advisory committee in seismotectonics of the Earthquake Planning and Protection Organization in Greece since 2014.

Professional Experience and Background: 1st class BA in Geology (1998), National and Kapodistrian University of Athens. PhD from University College London (UCL) in 2003. Thesis Title: "**Generating high-resolution seismic hazard maps through integration of earthquake geology, fault mechanics theory and GIS techniques in extensional tectonic settings**". Post-doctoral researcher in the Laboratory on Prevention and Management of Natural Hazards, National and Kapodistrian University of Athens, (2005-2007). Lecturer in the Laboratory of Mineralogy-Geology, Agricultural University of Athens (2007- 2011).

Research Activity: Author of 50 publications in Journals of the Citation Index, with an h-Index: 16 and more than 850 citations. Reviewer in 29 Journals.

Postgraduate supervision: He has successfully supervised/co-supervised 5 PhD students and 33 Msc students (14 as the primary supervisor). Currently is the Supervisor of 2 Postdocs, 5 PhD and 4 Msc Students.

Research and Applied Projects: Participated in several scientific projects with Universities from several countries, such as Birkbeck College University of London, RWTH Aachen, MIT, UCL, University of Mainz. These projects involved geodynamics, seismic, tsunami and environmental hazards.

Participated also in applied projects involving major infrastructure works such as high Pressure Gas Pipeline Projects (TAP, ITGI, IGB, Ag.Theodori-Megalopolis DESFA), highway-road networks, real estate projects and environmental reports regarding natural resources.

Publications (Full papers)

1. Louka, P.; Papanikolaou, I., Petropoulos, G.P.; Kalogeropoulos, K.; Stathopoulos, N. (2020). Identifying Spatially Correlated Patterns between Surface Water and Frost Risk Using EO Data and Geospatial Indices. *Water* 12, 700.
2. Obrocki, L.L., Vött, A., Wilken, D., Fischer, P., Willershäuser, T., Koster, B., Lang, F., Papanikolaou, I., Rabbel, W., Reicherter, K. (2020). Tracing tsunami signatures of the AD 551 and AD 1303 tsunamis at the Gulf of Kyparissia (Peloponnese, Greece) using direct push in situ sensing techniques combined with geophysical studies. *Sedimentology* 67, 1274–1308.
3. Iezzi, F., Roberts, G., Faure Walker, J., Papanikolaou, I. (2019). Occurrence of partial and total coseismic ruptures of segmented normal fault systems: Insights from the Central Apennines, Italy. *Journal of Structural Geology* 126, 83–99.
4. Mathes-Schmidt, M., Papanikolaou, I., Reicherter, K., Pallikarakis, A., (2019). Event deposits in the Eastern Thermaikos Gulf and Kassandra Peninsula (Northern Greece): evidence of the 479 BC "Herodotus tsunami". *Zeitschrift für Geomorphologie* 62, 101-125.
5. Papanikolaou, D., Nomikou, P., Papanikolaou, I., Lampridou, D., Rousakis, G., and Alexandri, M. (2019). Active tectonics and seismic hazard in Skyros Basin, North Aegean Sea, Greece. *Marine Geology* 407, 94-110.
6. Werner V., Baika K., Tzigounaki A., Reicherter K., Papanikolaou I., Emde K., Fischer P., Vött A. (2019). Mid-Holocene tectonic geomorphology of northern Crete deduced from a coastal sedimentary archive near Rethymnon and a Late Bronze Age Santorini tsunamite candidate. *Geomorphology* 326, 167-189.
7. Pallikarakis, A., Papanikolaou, I., Reicherter, K., Triantaphyllou, M., Dimiza, M., Koukousioura, O. (2019). Constraining the regional uplift rate of the Corinth Isthmus area (Greece), through biostratigraphic and tectonic data. *Zeitschrift für Geomorphologie* 62, 127-142.
8. Reicherter, K., Vött, A., Mathes-Schmidt, M., Papanikolaou, I., Schneiderwind, S., (2019). Editorial: Signatures of extreme events recorded in geological archives of the Mediterranean. *Zeitschrift für Geomorphologie* 62, 63-100.
9. Werner, V., Baika, K., Tzigounaki, A., Reicherter, K., Papanikolaou, I., Emde, K., Fischer, P., Vött, A. (2019). Extreme wave events recorded in sedimentary archives of the Geropotamos River (north-central Crete, Greece). *Zeitschrift für Geomorphologie* 62, 63-100.
10. Deligiannakis, G., Papanikolaou, I.D., Roberts, G. (2018). Fault Specific GIS Based Seismic Hazard Maps for the Attica Region, Greece. *Geomorphology* 306, 264-282.
11. Mechernich, S., Schneiderwind, S., Mason, J., Papanikolaou, I.D., Deligiannakis, G., Pallikarakis, A., Binnie, S.A., Dunai, T.J., Reicherter, K. (2018). The Seismic History of the Pisias Fault (Eastern Corinth Rift, Greece) From Fault Plane Weathering Features and Cosmogenic ³⁶Cl Dating. *Journal of Geophysical Research: Solid Earth* 123, 4266-4284.
12. Pallikarakis A., Triantaphyllou, M.V., Papanikolaou, I.D., Dimiza, M.D. Klaus Reicherter, K., and Migros, G. (2018). Age Constraints and Paleoenvironmental Interpretation of a Borehole Sedimentary Sequence at the Eastern Part of Corinth Isthmus, Greece. *Journal of Coastal Research* 34, 602-617.
13. Werner, V., Baika, K., Fischer P., Tzigounaki, A., Tsigkou, A., Klaus Reicherter, K., Papanikolaou, I., Vött, A. (2018). Palaeotsunami imprint of southwestern Crete (Greece) – examples from the ancient harbour of Sougia and the Palaiochora coastal plain. *Quaternary International* 473, 66-90.
14. Vött, A., Bruins, H.J., Gawehn, M., Goodman-Tchernov, B.N, De Martini, P.M., Kelletat, D., Mastronuzzi, G., Reicherter, K., Rübke, B.R., Scheffers, A., Willershäuser, T., Avramidis, P., Bellanova, P., Costa, P.J.M., Finkler, C., Hadler, H., Koster, B., Lario, J., Reinhardt, E., Mathes-Schmidt, M., Ntageretzis, K., Pantosti, D., Papanikolaou, I., Sansò, P., Scicchitano, G., Smedile, A., Szczuciński, W. (2018). Publicity waves based on manipulated geoscientific data suggesting climatic

trigger for majority of tsunami findings in the Mediterranean – Response to ‘Tsunamis in the geological record: Making waves with a cautionary tale from the Mediterranean’ by Marriner et al. (2017). *Zeitschrift für Geomorphologie* doi: 10.1127/zfg_suppl/2018/0547, 39p.

15. Papanikolaou, I., and Melaki, M. (2017). The Environmental Seismic Intensity Scale (ESI 2007) in Greece, newly added events and its relationship with Magnitude; Preliminary attenuation relationships for the Mediterranean. *Quaternary International*. 451, 37-55.

16. Schneiderwind, S., Boulton, S.J., Papanikolaou, I., Kázmér, M., Reicherter, K. (2017). Numerical modeling of tidal notch sequences on rocky coasts of the Mediterranean Basin. *Journal of Geophysical Research: Earth Surface* 122, 1154-1181.

17. Cowie, P. A., Phillips, R. J., Roberts, G. P., McCaffrey, K., Zijerveld, L. J. J., Gregory, L. C. , Faure Walker, J., Wedmore, L., Dunai, T. J., Binnie, S. A., Freeman, S.P., Wilcken, K., Shanks, R P., Huisman, R. S., Papanikolaou, I., Michetti, A. M., Wilkinson, M. (2017). Orogen-scale uplift in the central Italian Apennines drives episodic behaviour of earthquake faults. *Scientific Reports* 7, 44858.

18. Mason, J., Schneiderwind, S., Pallikarakis, A., Mechernich, S., Papanikolaou, I., & Reicherter, K. (2017). Hanging-wall colluvial cementation along active normal faults. *Quaternary Research* 88, 39-59.

19. Schneiderwind, S., Boulton, S.J., Papanikolaou, I., Reicherter, K. (2017). Innovative tidal notch detection using TLS and fuzzy logic: Implications for palaeo-shorelines from compressional (Crete) and extensional (Gulf of Corinth) tectonic settings. *Geomorphology* 283, 189-200.

20. Mason, J., Schneiderwind S., Pallikarakis, A., Wiatr T., Mechernich, S., Papanikolaou, I., and K. Reicherter (2016). Fault structure and deformation rates at the Lastros-Sfaka Graben, Crete. *Tectonophysics* 683, 216–232.

21. Schneiderwind, S., Mason, J., Wiatr, T., Papanikolaou, I., and Reicherter, K. (2016). 3-D visualisation of palaeoseismic trench stratigraphy and trench logging using terrestrial remote sensing and GPR – a multiparametric interpretation. *Solid Earth* 7, 323–340.

22. Karamesouti, M., Petropoulos, G.P., Papanikolaou, I.P., Kairis, O., Kosmas, K. (2016). Erosion rate predictions from PESERA and RUSLE at a Mediterranean site before and after a wildfire: Comparison & implications. *Geoderma* 261, 44–58.

23. Grutzner, C. Schneiderwind S., Papanikolaou, I., Deligiannakis, G., Pallikarakis, A., and Reicherter, K.. (2016). New constraints on extensional tectonics and seismic hazard in northern Attica, Greece: the case of the Milesi Fault. *Geophysical Journal International* 204, 180–199.

24. Papanikolaou, I.D., Van Balen, R., Silva, P.G., Reicherter, K. (2015). Geomorphology of Active Faulting and seismic hazard assessment: New tools and future challenges. *Geomorphology* 237, 1-13.

25. Wilkinson, M., Roberts, G.P., McCaffrey, Cowie, P.A., Faure Walker, J.P, Papanikolaou, I., Phillips, R. J., Michetti, A.M., Vittori, E., Gregory, L., Wedmore, L. and Watson, Z. (2015). Slip distributions on active normal faults measured from LiDAR and field mapping of geomorphic offsets: an example from L'Aquila, Italy, and implications for modelling seismic moment release. *Geomorphology* 237, 130-141.

26. Louka, P., Papanikolaou, I., Petropoulos, G.P., and Stathopoulos, N. (2016). A Deterministic Model to Predict Frost Hazard in Agricultural Land. Book Chapter 13 In *Geospatial Technology for Water Resource Applications*. Srivastava, P.K., Pandey, P.C., Kumar, P., Raghubanshi, A.S., Han, D. (Eds). ISBN: 978-149-871-968-1, CRC Press, Taylor and Francis, 197-225.

27. Papanikolaou, I.D., Triantaphyllou, M., Pallikarakis, A., Migiros, G. (2015). Active faulting at the Corinth Canal based on surface observations, borehole data and paleoenvironmental interpretations. Passive rupture during the 1981 earthquake sequence? *Geomorphology* 237, 65-78.

28. Mason, J., Reicherter K. and Papanikolaou, I. (2015). The Lapithas Mountain faults and nearby archaeological damage, western Peloponnese, Greece. *Zeitschrift für Geomorphologie* 59, Suppl. 4, 189–213.

29. Wiatr, T., Papanikolaou, I., Fernández-Steeger, T., Reicherter K. (2015). Bedrock fault scarp history: Insight from t-LiDAR backscatter behavior and analysis of structure changes. *Geomorphology* 228, 421–431.
30. Mavroulis, S.D., Fountoulis, I.G., Skourtsos, E.N., Lekkas, E.L. and Papanikolaou, I.D. (2013). Seismic intensity assignments for the 2008 Andravida (NW Peloponnese, Greece) strike-slip event (June 8, Mw=6.4) based on the application of the Environmental Seismic Intensity scale (ESI 2007) and the European Macroseismic scale (EMS-98). Geological structure, active tectonics, earthquake environmental effects and damage pattern. *Annals of Geophysics* 56, S0681, 1-27.
31. Wiatr T., Reicherter K., Papanikolaou I., Fernández-Steeger T., Mason J. (2013). Slip vector analysis with high resolution t-LiDAR scanning. *Tectonophysics* 608, 947-957.
32. Fomelis, M., Fountoulis, I., Papanikolaou, I.D., Papanikolaou, D. (2013). Geodetic evidence for passive control of a major Miocene tectonic boundary on the contemporary deformation field of Athens (Greece). *Annals of Geophysics* 56, S0674, 1-9.
33. Grützner, C., Barba, S., Papanikolaou, I., Pérez-López, R. (2013). Earthquake geology: science, society and critical facilities. *Annals of Geophysics* 56, S0683, 1-6.
34. Vött, A. Reicherter, K., and Papanikolaou, I. (2013). Reconstructing and modeling palaeotsunami events by multi-proxy geoscientific analyses. *Zeitschrift für Geomorphologie* 57, Suppl. 4, 1–4.
35. Papanikolaou, I.D., Roberts, G., Deligiannakis G., Sakellariou, A. and Vassilakis E. (2013). The Sparta Fault, Southern Greece: From segmentation and tectonic geomorphology to seismic hazard mapping and time dependent probabilities. *Tectonophysics* 597-598, 85-105.
36. Faure Walker, J.P., Roberts, G.P., Cowie, P.A., Papanikolaou, I., Michetti, A.M., Sammonds, P., Wilkinson, M., McCaffrey, K.J.W. and Phillips, R. (2012). Relationship between topography, rates of extension and mantle dynamics in the actively-extending Italian Apennines. *Earth and Planetary Science Letters* 325-326, 76–84.
37. Papanikolaou, I.D. (2011). Uncertainty in intensity assignment and attenuation relationships: how seismic hazard maps can benefit from the implementation of the Environmental Seismic Intensity scale (ESI 2007). *Quaternary International* 242, 42-51.
38. Papanikolaou, I., Lekkas, E., Fountoulis, I., Parcharidis, Is. and M. Fomelis (2010). Damage pattern and bedrock geology, primary and secondary surface ruptures of the 2009 (Mw=6.3) L' Aquila event and implications for seismic hazard planning. *Proceedings of the 11th International Association of Engineering Geology 2010, Auckland, New Zealand, paper ID No. 068, 579-586.*
39. Reicherter, K., Papanikolaou, I., Roger, J., Mathes-Schmidt, M., Papanikolaou, D., Rössler, S., Grützner, C. and Stamatis, G. (2010). Holocene tsunamigenic sediments and tsunami modeling in the Thermaikos Gulf area (northern Greece). *Zeitschrift für Geomorphologie* 54, Suppl 3, 99-126.
40. Papanikolaou, I.D., Fomelis, M., Parcharidis, I., Lekkas, E.L. and Fountoulis, I. (2010). Deformation pattern of the 6 and 7 April 2009, Mw=6.3 and Mw=5.6 earthquakes in L' Aquila (central Italy) revealed by ground and space based observations. *Natural Hazards and Earth System Sciences* 10, 73-87.
41. Migiros, G., Antoniou, Vas., Papanikolaou, I. and Antoniou Var. (2010). Tectonic setting and deformation of the Kallidromo Mt, central Greece. *Proceedings of the 12th International Congress in Patras. Bulletin of the Geological Society of Greece, XLIII 320-330.*
42. Papanikolaou, I.D., Papanikolaou, D.I, and Lekkas, E.L. (2009). Advances and limitations of the Environmental Seismic Intensity scale (ESI 2007) regarding near-field and far-field effects from recent earthquakes in Greece. Implications for the seismic hazard assessment. *The Geological Society, London, Special Publications* 316, 11–30.
43. Roberts, G. P., S. L. Houghton, C. Underwood, I. Papanikolaou, P. A. Cowie, P. van Calsteren, T. Wigley, F. J. Cooper, and J. M. McArthur (2009). Localization of Quaternary slip rates in an active

- rift in 105 years: An example from central Greece constrained by ²³⁴U-²³⁰Th coral dates from uplifted paleoshorelines. *Journal of Geophysical Research* 114, B10406, doi:10.1029/2008JB005818.
44. Faure-Walker J.P., Roberts, G.P., Cowie, P.A., Papanikolaou, I.D., Sammonds, P.R., Michetti, A.M. and Phillips, R.J. (2009). Horizontal strain-rates and throw-rates across breached relay-zones: an example from active normal faults in the Apennines, Italy. *Journal of Structural Geology* 31, 1145-1160.
 45. Papanikolaou, I. and Migiros, G. (2008). Brittle deformation and hydrogeological pattern of the Eastern Pelion area (Tsangarada). *Proceedings of the 8th International Hydrogeological Congress of Greece – 3rd MEM Workshop on Fissured Rocks Hydrology*, V.1, 347-360.
 46. Migiros, G., Psomiadis, E., Papanikolaou, I., Karamousalis, T., and Stamatis, G. (2008). Groundwater coastal discharge of the karstic system of the Mani peninsula, southern Peloponnese-Greece. *Proceedings of the 8th International Hydrogeological Congress of Greece – 3rd MEM Workshop on Fissured Rocks Hydrology*, V.1, 317-326.
 47. Lekkas, E.L., Papanikolaou, I.D., Papanikolaou, D.I. and Danamos G. (2008). Correlating the damage pattern and the geological structure. Local site effects from the 2006 Mw=6.7 Kythira island intermediate depth event, SW Greece. *Proceedings of the 14th World Conference on Earthquake Engineering* October 12-17, 2008, Beijing, China (8 pages).
 48. Papanikolaou, I.D., Papanikolaou, D.I. and Lekkas, E.L. (2008). Low slip-rate faults around big cities: A challenging threat. The Afidnai fault as a case study for the city of Athens. *Proceedings of the 14th World Conference on Earthquake Engineering* October 12-17, 2008, Beijing, China (8 pages).
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 50. Papanikolaou, I.D. and Roberts G.P. (2007). Geometry, kinematics and deformation rates along the active normal fault system in the Southern Apennines: implications for fault growth. *Journal of Structural Geology* 29, 166-188.
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 52. Papanikolaou, I.D. and Papanikolaou, D.I. (2007). Seismic hazard scenarios from the longest geologically constrained active fault of the Aegean. *Quaternary International* 171-172, 31-44.
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