

ΔΕΛΤΙΟ ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΓΕΩΛΟΓΙΚΗΣ ΕΤΑΙΡΙΑΣ

Τόμος XLVII, No 3

BULLETIN OF THE GEOLOGICAL SOCIETY OF GREECE

Volume XLVII, No 3



13^ο Διεθνές Συνέδριο της Ελληνικής Γεωλογικής Εταιρίας

Έρευνα και Εκμετάλλευση Ορυκτών Πόρων

13th International Congress of the Geological Society of Greece

Exploration and Exploitation of Mineral Resources



13th International Congress of the Geological Society of Greece
September 5-8 2013, Chania, Crete, Greece

ΕΠΙΜΕΛΕΙΑ ΕΚΔΟΣΗΣ

ΜΑΝΟΥΤΣΟΓΛΟΥ ΕΜΜΑΝΟΥΗΛ

ΠΥΛΙΩΤΗΣ ΙΩΑΝΝΗΣ

Πολυτεχνείο Κρήτης

EDITORS

ΜΑΝΟΥΤΣΟΓΛΟΥ ΕΜΜΑΝΟΥΗΛ

ΠΥΛΙΩΤΗΣ ΙΩΑΝΝΗΣ

Technical University of Crete

Χανιά/Chania 2013

ΔΟΜΗ ΤΩΝ ΠΡΑΚΤΙΚΩΝ / SCHEME OF THE PROCEEDINGS

TOMOS 1 / VOLUME 1

Opening Lectures/Εναρκτήριες Ομιλίες

Palaeontology, Stratigraphy and Sedimentology/Παλαιοντολογία, Στρωματογραφία και Ιζηματολογία

Geomorphology/Γεωμορφολογία

Petrology and Mineralogy/Πετρολογία και Ορυκτολογία

TOMOS 2 / VOLUME 2

Tectonics and Geodynamics/Τεκτονική και Γεωδυναμική

Hydrology and Hydrogeology/Υδρολογία και Υδρογεωλογία

Geochemistry and Biogeochemistry/Γεωχημεία και Βιογεωχημεία

Environmental Geology/Περιβαλλοντική Γεωλογία

Geosciences in Education and Geosites/Γεωεπιστήμες στην Εκπαίδευση και Γεώτοποι

TOMOS 3 / VOLUME 3

Geophysics and Seismology/Γεωφυσική και Σεισμολογία

Natural Hazards/Φυσικές Καταστροφές

Remote Sensing and GIS/Τηλεπισκόπηση και ΓΣΠ

Marine Geology/Θαλάσσια Γεωλογία

TOMOS 4 / VOLUME 4

Ore Geology, Mining Technology and Economic Geology/Κοιτασματολογία, Μεταλλευτική
Τεχνολογία και Οικονομική Γεωλογία

Engineering Geology and Geotechnical Engineering/Τεχνική Γεωλογία και Γεωτεχνική Μηχανική

Geothermics/Γεωθερμία

Exploration and Exploitation of Mineral Resources/Ερευνα και Εκμετάλλευση Ορυκτών Πόρων

Industrial Minerals and Rocks/Βιομηχανικά Ορυκτά και Πετρώματα

Energy Resources/Ενεργειακές Πρώτες Ύλες

ΠΕΡΙΕΧΟΜΕΝΑ/CONTENTS

TOMOΣ 1 / VOLUME 1

Opening Lectures/Εναρκτήριες Ομιλίες

Palaeontology, Stratigraphy and Sedimentology/Παλαιοντολογία, Στρωματογραφία και Ιζηματολογία

Geomorphology/Γεωμορφολογία

Petrology and Mineralogy/Πετρολογία και Ορυκτολογία

Εναρκτήριες Ομιλίες

Opening Lectures

Μαριολάκος Η.Δ.: Μεταλλευτική και μεταλλουργική δραστηριότητα των προϊστορικών κατοίκων του Αιγαίου και πέρι-Αιγαίου χώρου: Μια γεωμυθολογική προσέγγιση.....2

Μπαζιώτης Ι. και Taylor L.A.: Είμαστε μόνοι στο συμπάν; Οι μετεωρίτες δίνουν απαντήσεις;.....32

Παλαιοντολογία, Στρωματογραφία και Ιζηματολογία

Palaeontology, Stratigraphy and Sedimentology

Agiadi K., Koskeridou E., Triantaphyllou M. and Karakitsios V.: Paleobathymetry of a Pliocene Voutes coast (Heraklion, Crete).....52

Athnasiou M., Triantaphyllou M., Dimiza M., Gogou A., Bouloubassi I., Tsiolakis E. and Theodorou G.: Early-Middle Miocene from Kotaphi hill section (Nicosia, Cyprus): Preliminary biostratigraphy and paleoceanographic implications.....62

Chatziapostolou A., Siavalas G., Kalaitzidis S. and Christanis K.: Geological study for a wetland restoration: The case of the drained Mouria Lake (W. Peloponnese).....72

Codrea V., Solomon Al., Fărcaș C. and Barbu O.: On some local restricted Maastrichtian environments of the “Hațeg Island” (Transylvania, Romania).....82

Drinia H.: Climatic vs tectonic control on the Early Late Miocene tectono-stratigraphic deposits of the Pre-Apulian Zone, Western Greece.....92

Drinia H., Antonarakou A. and Louvari M.A.: Foraminiferal biostratigraphy and palaeoenvironmental analysis of the basal part of Kalamavka formation (Late Miocene, Ierapetra Basin, Eastern Crete)102

Drinia H., Antonarakou A., Mihalakopoulos S. and Tsiolakis E.: Eastern Mediterranean foraminiferal palaeoecological response to Mid-Late Pliocene climatic regime: A preliminary note....112

Filippidi A., Stathopoulou E.T. and Theodorou G.: Taphonomical observations on the pygmy hippopotamus site in Aghia Napa, Cyprus.....122

Karakitsios V. and Chatzicharalampous E.: Biostratigraphy and sedimentology of the Ionian Zone Ammonitico Rosso in the Mavron Oros area (NW Epirus, Greece) - Paleogeographic implications.....	136
Karakitsios V., Roveri M., Lugli S., Manzi V., Gennari R., Antonarakou A., Triantaphyllou M., Agiadi K. and Kontakiotis G.: Remarks on the Messinian evaporites of Zakynthos Island (Ionian Sea, Eastern Mediterranean).....	146
Karditsa A. and Poulos S.E.: The application of grain size trend analysis in the fine grained seabed sediment of Alexandroupolis Gulf.....	157
Kontakiotis G., Antonarakou A. and Zachariasse W.J.: Late Quaternary palaeoenvironmental changes in the Aegean Sea: Interrelations and interactions between North and South Aegean Sea.....	167
Koskeridou E., Thivaïou D. and Giamali Ch.: Molluscan assemblages in a highly variable setting in littoral bottoms of the Lower Pleistocene of Rhodes (Greece).....	178
Kostaki G., Kilias A., Gawlick H.J. and Schlagintweit F.: ?Kimmeridgian-Tithonian shallow-water platform clasts from mass flows on top of the Vardar/Axios ophiolites.....	184
Kostopoulou S., Triantaphyllou M.B., Dimiza M.D., Gogou A., Bouloubassi I., Rousakis G., Parinos C., Diamantopoulou An., Geraga M. and Lykousis V.: Preliminary results of high resolution paleoceanography and paleoclimatology during sapropel S1 deposition (South Limnos Basin, North Aegean Sea).....	194
Mantzouka D., Sakala J., Kvaček Z. and Karakitsios V.: Palaeobotanical study of Polichnitos region, southern part of Lesbos Island, Greece (preliminary results on angiosperm wood).....	204
Moforis L., Kostopoulou S., Panagopoulos G., Pyliotis I., Triantaphyllou M., Manoutsoglou E. and Zelilidis A.: Sedimentation processes and palaeographic evolution of Makrilia Pliocene deposits, SE Crete.....	216
Zoumpouli E., Pomoni-Papaïoannou F., Zelilidis A. and Iliopoulos G.: Biostratigraphical and sedimentological study of an Upper Cretaceous succession in the Sami area (central area of Kefallinia, W. Greece).....	226

Γεωμορφολογία

Geomorphology

Aidona E., Kazakis N., Mavroidaki K. and Voudouris K.: Magnetic susceptibility as a tool for the discrimination of anthropogenic and lithogenic history of topsoils: preliminary results from the broader area of Thessaloniki city.....	236
Griffiths H.M., Kalivas D.P., Petropoulos G.P. and Dimou P.: Mapping erosion and deposition changes in the protected wetlands of the Axios River Delta, N. Greece using remote sensing and GIS.....	245
Ifandi E., Tsikouras B. and Hatzipanagiotou K.: Contribution to the evolution of the Perama Cave (Ioannina, NW Greece).....	255
Iliá I., Rozos D. and Koumantakis I.: Landform classification using GIS techniques. The case of Kimi municipality area, Euboea Island, Greece.....	264
Kokinou E., Panagiotakis C. and Kinigopoulos Th.: Retrieval of similar topographic areas.....	275

Kokinou E., Skilodimou H.D. and Bathrellos G.D.: Morphotectonic analysis of Heraklion Basin (Crete, Greece).....	285
Michail M. and Chatzipetros A.: Morphotectonic analysis of faults in Sperchios Basin (Fthiotis, Central Greece).....	295
Papoulia M., Karymbalis E., Gaki-Papanastassiou K. and Maroukian H.: Assessment of the susceptibility of the coast of Astypalaea Island (S.E. Aegean Sea) to sea level rise.....	305
Perrou Th., Kaza I., Efthymiadis V., Karymbalis E. and Chalkias C.: Recent coastline changes of fan-deltas in the Western Gulf of Corinth, Central Greece.....	315
Psomiadis E., Migiros G. and Antoniou V.: Geomorphological quantitative analysis of Sperchios River Basin area (Central Greece) utilizing geographical information systems.....	325
Skentos A., Liosis N. and Pavlopoulos K.: Geomorphological mapping of Messogia plain (East Attica, Greece).....	335
Valkanou K., Karymbalis E., Papanastassiou D., Gaki-Papanastassiou K. and Giles P.: Analysis of relationships among coastal alluvial fans and their contributing catchments in North Evoikos Gulf (Central Greece).....	344

Πετρολογία και Ορυκτολογία
Petrology and Mineralogy

Baziotis I., Asimow P.D., Koroneos A., Poli G. and Ntaflos T.: Multi-stage history of compound mantle xenoliths from Western USA: Implications for metasomatic processes in the deep mantle.....	357
Christidis G.E and Koutsopoulou E.: Thermal behaviour of stevensite at temperatures up to 800°C.....	366
Drakoulis A., Koroneos A., Soldatos T. and Papadopoulou L.: Mineralogy and chemistry of amphiboles and thermobarometry of Papikion Mt pluton, Rhodope, Northern Greece.....	373
Karampatsou G., Markopoulos Th., Repouskou E. and Triantafyllou G.: Mineralogical and physico-chemical properties of the building materials of Koule castle, Heraklion, Crete.....	383
Kougemitrou I., Economou G., Giovanopoulos J., Baziotis I., Leontakianakos G. and Stathopoulos V.: A mineralogical study of pigments used in two Iakovidis paintings: Verification of artwork authenticity using Raman micro-spectroscopy method.....	392
Mposkos E. and Perraki M.: Metamorphic record in metalherzolite pockets within the Virsini metaharzburgite from the Kechros HP metamorphic complex in Eastern Rhodope, Greece.....	397
Papoulis D., Komarneni S., Toli D., Panagiotaras D. and Bakalis S.: Synthesis and characterization of four new halloysite–TiO ₂ nanocomposites.....	407
Pipera K., Koroneos A., Soldatos T., Poli G. and Christofides G.: Origin of the High-K Tertiary magmatism in Northern Greece: Implications for mantle geochemistry and geotectonic setting.....	416
Stamatakis M.G. and Mitsis I.: The occurrences of Mg-hydroxycarbonates in serpentinites of the western section of the South Aegean volcanic arc (West Attica peninsula-Northeastern Argolis peninsula), Greece.....	427
Thabet I., Kiliyas A., Koroneos A. and Kamh S.: Petrography and zircon morphology of syntectonic granitoid rocks of Hafafit area, South Eastern Desert (Egypt).....	438

Tsikouras B., Etiope G., Ifandi E., Kordella S., Papatheodorou G. and Hatzipanagiotou K.: Petrological implications for the production of methane and hydrogen in hyperalkaline springs from the Othrys ophiolite, Greece.....	449
Vallianatos F., Michas G., Papadakis G., Kyriakopoulos K. and Vasilakopoulos V.: A Non-Extensive statistical physics approach to the characterization of the pyroclastic deposits of the Kos volcanic center.....	458
Voudouris P., Constantinidou S., Kati M., Mavrogonatos C., Kanellopoulos C. and Volioti E.: Genesis of alpinotype fissure minerals from Thasos Island, Northern Greece - Mineralogy, mineral chemistry and crystallizing environment.....	468
Voudouris P., Psimis I., Mavrogonatos C., Kanellopoulos C., Kati M. and Chlekou E.: Amethyst occurrences in Tertiary volcanic rocks of Greece: Mineralogical and genetic implications.....	477
Voudouris P., Xinou A., Kanellopoulos C., Kati M., Mavrogonatos C., and Lyberopoulos P.: A new occurrence of pyrophanite from the amphibolite-hosted skarn in Western Kimmeria, Xanthi, Northern Greece.....	487

TOMOΣ 2 / VOLUME 2

Tectonics and Geodynamics/Τεκτονική και Γεωδυναμική
Hydrology and Hydrogeology/Υδρολογία και Υδρογεωλογία
Geochemistry and Biogeochemistry/Γεωχημεία και Βιογεωχημεία
Environmental Geology/Περιβαλλοντική Γεωλογία
Geosciences in Education and Geosites/Γεωεπιστήμες στην Εκπαίδευση και Γεώτοποι

Τεκτονική και Γεωδυναμική Tectonics and Geodynamics

Bradley K.E., Vassilakis E., Weiss B.P. and Royden L.H.: A re-assessment of the shallow paleomagnetic inclinations of the Western Cyclades, Greece.....	498
Chousianitis K., Ganas A., Papanikolaou M., Argyrakis P., Drakatos G. and Makropoulos K.: Time series analysis of the NOANET CGPS stations.....	508
Ganas A., Oikonomou I.A. and Tsimi C.: NOA faults: a digital database for active faults in Greece.....	518
Kalisperi D., Rigakis I., Makris J.P., Romano G. and Vallianatos F.: Continuous magnetotelluric observations in Western Crete as a tool for the study of the Hellenic subduction Zone.....	531
Kamberis E., Sotiropoulos S., Marnelis F. and Rigakis N.: Thrust tectonics in the central part of the External Hellenides, the case of the Gavrovo thrust.....	540
Kilias Ad., Vamvaka A., Falalakis G., Sfeikos A., Papadimitriou E., Gkarlaouni Ch. and Karakostas B.: The Mesohellenic trough and the Thrace Basin. Two Tertiary molassic Basins in Hellenides: do they really correlate?.....	551

Kkallas Ch., Papazachos C.B., Scordilis E.M. and Margaris B.N.: Re-examining the stress field of the broader southern Aegean subduction area using an updated focal mechanism database.....	563
Mariolakos I.D. and Manoutsoglou E.: The geotectonic evolution of Olympus Mt and its mythological analogue.....	574
Mountrakis D., Kilias A., Pavlaki A., Fassoulas C., Thomaidou E., Papazachos C., Papaioannou C., Roumelioti Z., Benetatos C. and Vamvakaris D.: Neotectonic analysis, active stress field and active faults seismic hazard assessment in Western Crete.....	582
Mouslopoulou V., Moraetis D., Benedetti L., Guillou V. and Hristopulos D.: Paleoearthquake history of the Spili fault, Crete, Greece.....	595
Panagopoulos G., Giannakakos E., Manoutsoglou E., Steiakakis E., Soupios P. and Vafidis A.: Definition of inferred faults using 3D geological modeling techniques: A case study in Tympaki Basin in Crete, Greece.....	605
Papoulis D., Romiou D., Kokkalas S. and Lampropoulou P.: Clay minerals from the Arkitsa fault gouge zone, in Central Greece, and implications for fluid flow.....	616
Ring U., Gessner K., Thomson S. and Markwitz V.: Along-strike variations in the Hellenide Anatolide orogen: A tale of different lithospheres and consequences.....	625
Rondoyanni Th., Lykoudi E. and Kalogeras E.: Coseismic surface displacement variability in relation to lithology.....	637
Sakellariou D., Mascle J. and Lykousis V.: Strike slip tectonics and transtensional deformation in the Aegean region and the Hellenic arc: Preliminary results.....	647
Simou E., Karagkouni V., Papantoniou G., Papanikolaou D. and Nomikou P.: Morphotectonic analysis of Kozani Basin (Western Macedonia, Greece).....	657
Thabet I., Kilias A. and Kamh S.: Microstructural finite strain analysis of the Hafafit granitoids domes South Central Eastern desert of Egypt.....	667

Υδρολογία και Υδρογεωλογία
Hydrology and Hydrogeology

Angelakopoulou E., Koumantakis I., Vasileiou E. and Stathopoulos N.: Groundwater quality characteristics of the Anavisos Basin.....	682
Antonakos A. and Nikas K.: Delineation of recharge areas of the aquifer systems of Corinthia prefecture by the use of isotopic evidence.....	692
Katsifa M., Koumantakis I., Stathopoulos N. and Vasileiou E.: Environmental pressures to the water resources in the wider area of Roditsa, in Sperchios River Delta of Eastern Central Greece.....	702
Kazakis N., Voudouris K., Vargemezis G. and Pavlou A.: Hydrogeological regime and groundwater occurrence in the Anthemountas River Basin, Northern Greece.....	711
Kourgialas N.N. and Karatzas G.P.: Flood and groundwater management for the mountain plateau of Omalos based on geoinformatics techniques.....	721
Kyriazis D., Zagana E., Stamatis G., Fillippidis F. and Psomiadis E.: Assessment of groundwater pollution in relation to heavy metals of the alluvial aquifer of Thriasion Plain (NW Attica).....	731

Lappas I., Tsioumas V. and Zorapas V.: Spatial-temporal analysis, variation and distribution of precipitation in the water district of Central-Eastern Greece.....	740
Matiatos I. and Alexopoulos A.: Analysis of temporal hydrochemical and isotopic variations in spring waters of Eastern Peloponnesus (Greece).....	750
Pavlou A., Soulios G., Dimopoulos G., Tsokas G., Mattas C., Kazakis N. and Voudouris K.: Groundwater quality of the coastal aquifers in the eastern part of Thermaikos Gulf (from Aggelochori to Kallikrateia).....	761
Soulios G., Mattas C., Kaklis T., Sotiriadis M., Voudouris K. and Dimopoulos G.: Is the construction of a sanitary landfill acceptable in a karstic area? The case of the sanitary landfill site in Fokida, Central Greece.....	771
Stathopoulos N., Rozos D. and Vasileiou E.: Water resources management in Sperchios River Basin, using SWOT analysis.....	779
Tsangaratos P., Pizpikis T., Vasileiou E., Pliakas F., Schuth C. and Kallioras A.: Development of multi-criteria decision support system (DSS) coupled with GIS for identifying optimal locations for soil aquifer treatment (SAT) facilities.....	789
Vasileiou E. and Koumantakis I.: The role of Kefalovruso and Amourio springs in the hydrodynamic conditions of Potamia Elassona Basin.....	801

Γεωχημεία και Βιογεωχημεία
Geochemistry and Biogeochemistry

Giouri K., Papadopoulos A., Bourliva A., Tzamos E., Papadopoulou L. and Filippidis A.: Trace element content and morphological characteristics in microscale of commercially available clays used as cosmetic products.....	812
Jordanidis A. and Garcia-Guinea J.: Analytical geochemistry in the service of medicine: An experimental study of urinary stones from Northern Greece.....	818
Kafousia N., Karakitsios V., Mattioli E. and Jenkyns H.C.: Chemostratigraphy of the Toarcian oceanic anoxic event from the Ionian Zone, Greece.....	825
Kilias S.P., Chatzitheodoridis E. and Lyon I.: Molecular, chemical and morphological evidence for hematite biogenicity at the Quaternary Cape Vani Mn-(Ba-Fe) deposit, Milos, Greece.....	834
Moraetis D. and Mouslopoulou V.: Preliminary results of REE-Y sorption on carbonate rocks.....	843
Nioti D., Maravelis A., Tserolas P. and Zelilidis A.: TOC and CaCO ₃ content in Oligocene shelf deposits on Lemnos Island and their relation with depositional conditions.....	852
Pyliotis I., Hamilaki E., Pasadakis N. and Manoutsoglou E.: Comparative evaluation of Rock-Eval and elemental analysis to determine organic carbon content in sediment samples.....	862
Pyliotis I., Zelilidis A., Pasadakis N., Panagopoulos G. and Manoutsoglou E.: Source rock potential of the Late Miocene Metochia formation of Gavdos Island, Greece.....	871
Rallakis D., Siavalas G., Oskay R.G., Tsimiklis D. and Christanis K.: Maturity of dispersed organic matter in bituminous formations of the Ionian Zone (Epirus region, NW Greece).....	880

Περιβαλλοντική Γεωλογία
Environmental Geology

Aidona E., Pechlivanidou S. and Pennos Ch.: Environmental magnetism: Application to cave sediments.....	892
Argyrazi A., Kelepertzis E., Fligos G., Athanasiou E., Gardiakos K. and Kourgia V.: Geochemical mapping of urban soils in Athens, Greece - Preliminary results.....	901
Argyrazi A., Paraskos F., Marmara M., Papadopoulou K. and Maglaropoulou A.: Comparative geochemistry of three urban streams in Athens: Kifissos-Podoniftis-Pikrodafni.....	910
Filippidis A., Godelitsas A., Kantiranis N., Gamaletsos P., Tzamos E. and Filippidis S.: Neutralization of sludge and purification of wastewater from Sindos industrial area of Thessaloniki (Greece) using natural zeolite.....	920
Georgiadis I.K., Papadopoulos A., Filippidis A., Godelitsas A., Tsirambides A. and Vogiatzis D.: Removal of malachite green dye from aqueous solutions by diasporic Greek raw bauxite.....	927
Giouri K., Vavelidis M. and Melfos V.: Occurrence of arsenic in waters and sediments of the Palea Kavala River, NE Macedonia, Northern Greece.....	934
Kanellopoulos C. and Mitropoulos P.: Geochemical effect of the rock chemistry and the anthropogenic activities on groundwater: The case study of NW Euboea, Greece.....	942
Katsimicha D., Pentari D., Pantelaki O. and Komnitsas K.: Effect of wet milling on the adsorption capacity of a greek natural zeolite used for the removal of heavy metals from solutions.....	953
Kokinou E., Belonaki C., Sakadakis D. and Sakadaki K.: Environmental monitoring of soil pollution in urban areas (a case study from Heraklion city, Central Crete, Greece).....	963
Koutsopoulou E., Katsanou K., Papoulis D., Zagana E. and Tsolis-Katagas P.: Environmental assessment of contaminants in a downstream area of a landfill.....	972
Samara T. and Yoxas G.: Drastic method to map groundwater vulnerability to pollution using nitrate measurements in agricultural areas.....	981
Zotiadis V. and Argyrazi A.: Development of innovative environmental applications of attapulgite clay.....	992

Γεωεπιστήμες στην Εκπαίδευση και Γεώτοποι
Geosciences in Education and Geosites

Fassoulas C., Staridas S., Perakis V. and Mavrokosta C.: Revealing the geoheritage of Eastern Crete, through the development of Sitia Geopark, Crete, Greece.....	1004
Galani L., Theodorakopoulou K., Skentos A., Kritikos G. and Pavlopoulos K.: GIS as an educational tool: Mapping cultural sites in greek space-time.....	1017
Leontakianakos G., Vrachas C., Baziotis G., Baziotis I., Soutati G. and Fermeli G.: Theoretical approach of teaching lithosphere in junior high school: A critical review of the content and objectives defined by the curriculum of the Ministry of Education.....	1024
Tsangaratos P., Perraki M. and Iliia I.: Developing an interactive application embodied in the geosciences educational procedure.....	1031

TOMOS 3 / VOLUME 3

Geophysics and Seismology/Γεωφυσική και Σεισμολογία

Natural Hazards/Φυσικές Καταστροφές

Remote Sensing and GIS/Τηλεπισκόπηση και ΓΣΠ

Marine Geology/Θαλάσσια Γεωλογία

Γεωφυσική και Σεισμολογία Geophysics and Seismology

Angelis G.L., Stephanopoulos P., Papamarinopoulos St.P.: Geoelectric prospecting in University Campus region for detection of possible geological discontinuities, Rio, Patra, Greece.....	1042
Apostolopoulos G., Pavlaki C., Perleros V. and Amolochitis G.: Geophysical investigation and its geological interpretation in the frame of an intergrated survey prior to a dam construction in Plati River Valley, Rethymno, Greece.....	1052
Baskoutas I. and Papadopoulos G.: Qualitative precursory pattern before several strong earthquakes in Greece.....	1061
Benekos G., Parcharidis I., Foumelis M. and Ganas A.: Ground deformation measurements over Lake Trichonis based on SAR interferometry.....	1071
Bouranta E., Vallianatos F., Hatzopoulos J.N., Papadopoulos I. and Gaganis P.: Microtremor HVSR study of site effects in the urban area of the town of Mytilene, Lesvos (Greece) - Preliminary results.....	1081
Ghaib F.A., Abdulla H. and Anwar H.: Resistivity investigation for well-site definition around Barika Village, Southeast Sulaimany city, Iraqi Kurdistan region.....	1090
Gkarlaouni Ch., Papadimitriou E., Lasocki S., Lizurek G., Karakostas V. and Kiliass A.: Stochastic analysis of earthquake activity in two seismogenic fault systems in Greece.....	1099
Karagianni E., Paradisopoulou P. and Karakostas V.: Spatio-temporal earthquake clustering in the Western Corinth Gulf.....	1109
Karmis P., Giannoulououlos P., Sofos F. and Lappas I.: Hydrogeophysical exploration for estimating groundwater reservoirs areas in Southern Rhodes through ERT (Electrical Resistivity Tomography) method.....	1118
Kiratzis A.: The 1912 Ganos earthquake: Source constraints using ground motion simulations.....	1128
Kiratzis A., Aktar M. and Sviskas N.: The 10 June 2012 Mw 6.0 earthquake sequence in the easternmost end of the Hellenic arc.....	1138
Kiratzis A., Klimis N., Theodoulidis N., Margaris V., Makra K., Christaras B., Chatzipetros A., Papathanassiou G., Savvaidis A., Pavlides Sp., Roumelioti Z., Sapountzi L., Diamantis I., Lazaridis Th., Petala E. and Mimidis K.: Characterization of site conditions in Greece for realistic seismic ground motion simulations: Pilot application in urban areas.....	1148
Leptokaropoulos K.M., Papadimitriou E.E., Orlecka-Sikora B., Karakostas V.G. and Vallianatos F.: Modeling seismicity rate changes along the Hellenic subduction Zone (Greece).....	1157
Mesimeri M., Papadimitriou E., Karakostas V. and Tsaklidis G.: Earthquake clusters in NW Peloponnese.....	1167

Michas G., Papadakis G. and Vallianatos F.: A Non-Extensive approach in investigating Greek seismicity.....	1177
Mouzakiotis E. and Karastathis V.K.: Improved earthquake location in the area of North Euboean Gulf after the implementation of a 3D non-linear location method in combination with a 3D velocity model.....	1185
Papadakis G., Vallianatos F. and Michas G.: The earthquake interevent time distribution along the Hellenic subduction Zone.....	1194
Papadopoulos I., Papazachos C., Savvaidis A., Theodoulidis N., Vallianatos F. and Tsourlos P.: Results for the shallow structure of the broader region of Chania by HVSR measurements of ambient noise and their validation using simulation of ambient noise and independent geological information.....	1201
Paradisopoulou P., Papadimitriou E., Mirek J. and Karakostas V.: Coseismic stress distribution along active structures and their influence on time-dependent probability values.....	1211
Pitilakis K., Roumelioti Z., Manakou M., Raptakis D., Liakakis K., Anastasiadis A. and Pitilakis D.: The web portal of the EUROSEISTEST strong ground motion database.....	1221
Roumelioti Z., Theodoulidis N. and Bouchon M.: Constraints on the location of the 2008, M_w 6.4 Achaia-Ilia earthquake fault from strong motion data.....	1231
Scordilis E., Kementzetzidou D. and Papazachos B.: Local magnitude estimation in Greece, based on recordings of the Hellenic Unified Seismic Network (HUSN).....	1241
Simyrdanis K., Tsourlos P., Soupios P. and Tsokas G.: Simulation of ERT surface-to-tunnel measurements.....	1251
Soupios P., Papadopoulos N. and Sarris A.: Reconstructing concealed cultural remains through integrated geophysical tomographic methods.....	1260
Stavroulopoulou O., Sokos E., Martakis N. and Tselentis G.A.: Earthquake relocation for Northwestern Greece using 3D crustal model; method comparison and seismotectonic interpretation.....	1269
Tema E.: Detailed archaeomagnetic study of a ceramic workshop at Kato Achaia: New directional data and archaeomagnetic dating in Greece.....	1279
Tema E., Pavlides S. and Kondopoulou D.: Late bronze age pottery as indicator of the deposition temperatures of the Minoan pyroclastic products, Santorini, Greece.....	1289
Teza E., Scordilis E.M., Papazachos C.B. and Karakaisis G.F.: Near-real-time evaluation of the evolution of a seismic excitation: Application to the January 8, 2013 Lemnos seismic sequence.....	1298
Triantafyllis N., Sokos E. and Ilias A.: Automatic moment tensor determination for the Hellenic Unified Seismic Network.....	1308
Tsampas A.D., Scordilis E.M., Papazachos C.B. and Karakaisis G.F.: Globally valid relations converting magnitudes of intermediate and deep-focus earthquakes to M_w	1316
Tzanis A., Vallianatos F. and Efstathiou A.: Multidimensional earthquake frequency distributions consistent with Non-Extensive statistical physics: The interdependence of magnitude, interevent time and interevent distance in North California.....	1326
Vafidis A., Andronikidis N., Hamdan H., Kritikakis G., Economou N., Panagopoulos G., Soupios P., Steiakakis E. and Manoutsoglou E.: The CLEARWATER project: preliminary results from the geophysical survey in Tympaki, Crete, Greece.....	1338

Vafidis A., Andronikidis N., Hamdan H., Kritikakis G., Economou N., Panagopoulos G., Zanttidis S., Merziotis D., Pateras S., Nikofoarakis E. and Blais J.P.: Rock characterization for the foundation of two water reservoirs using geophysical and borehole data.....	1345
Vargemezis G., Diamanti N., Fikos I., Stampolidis A., Makedon Th. and Chatzigogos N.: Ground penetrating radar and electrical resistivity tomography for locating buried building foundations: A case study in the city centre of Thessaloniki, Greece.....	1355
Ventouzi Ch., Papazachos C., Papaioannou Ch., Hatzidimitriou P. and the EGELADOS working group: Obtaining information on the Q-structure of the southern Aegean subduction area by spectral slopes from temporary and permanent networks.....	1366
Votsi I., Tsaklidis G., Limmios N., Papadimitriou E. and Vallianatos F.: A Markov model for seismic hazard analysis along the Hellenic subduction Zone (Greece)	1376

Φυσικές Καταστροφές
Natural Hazards

Diakakis M.: Flood reconstruction using botanical evidence in Rapentosa catchment, in Marathon, Greece.....	1388
Diakakis M. and Deligiannakis G.: Changes in flood mortality during the last 50 years in Greece.....	1397
Diakakis M., Katsetsiadou K. and Pallikarakis A.: Flood fatalities in Athens, Greece: 1880-2010.....	1407
Pertsinidou C.E., Tsaklidis G. and Papadimitriou E.: Seismic hazard assessment in the Northern Aegean Sea (Greece) through discrete Semi-Markov modeling.....	1417
Saroglou H.: Rockfall hazard in Greece.....	1429
Vafidis A., Steiakakis M., Agioutantis Z., Andronikidis N., Kritikakis G., Economou N., Pandi K., Spanoudakis N., Savvaidis A., Margaris B., Theodoulidis N., Lekidis V., Karakostas Ch., Mangriotis M.D., Kalogeras I., Koutrakis S., Rozos D., Loupasakis C., Rondoyanni Th., Tsangaratos P., Dikmen U., Papadopoulos N., Sarris A., Soupios P., Kokkinou E., Papadopoulos I., Kouli M. and Vallianatos F.: “Geo-characterization” of selected areas in Crete, Greece, towards realistic assessment of seismic design actions.....	1439

Τηλεπισκόπηση και ΓΣΠ
Remote Sensing and GIS

Alexakis D.D., Agapiou A., Themistocleous K., Lysandrou V., Sarris A. and Hadjimitsis D.G.: Natural and human hazard assessment of the archaeological sites of Paphos area (Cyprus) with the use of remote sensing and GIS.....	1448
Grimpylakos G., Karacostas T.S. and Albanakis K.: Spatial and temporal distribution of rainfall and temperature in Macedonia, Greece, over a thirty year period, using GIS.....	1458
Kordouli M., Kavoura Kat., Nikolakopoulos K. and Sabatakakis N.: Landslide inventory using GISMA techniques.....	1472
Marsellos A.E., Foster D.A., Min K., Kidd W.S.F., Garver J. and Kyriakopoulos K.: An application of GIS analysis on structural data from metamorphic rocks in Santorini Island.....	1479

Nikolakopoulos G.K., Choussiafis Ch. and Karathanassi V.: Landslide detection using ALOS optical and radar data. A case study from the Ilia prefecture.....	1489
Nikolakopoulos G.K., Tsombos I.P., Photiades A., Psonis K. and Zervakou A.: Using remote sensing multispectral data and GIS techniques for the geological mapping of Halki Island.....	1500
Raspini F., Loupasakis C., Rozos D. and Moretti S.: Basin and local scale detection of ground subsidence through persistent scatterer interferometry: The Anthemountas Basin (Northern Greece) case study.....	1510
Stefouli M., Vasileiou E., Charou E., Stathopoulos N., Perrakis A. and Giampouras P.: Remote sensing techniques as a tool for detecting water outflows. The case study of Cephalonia Island.....	1519
Tsangaratos P. and Koumantakis I.: The value of geological data, information and knowledge in producing landslide susceptibility maps.....	1529
Tsangaratos P. and Rozos D.: Producing landslide susceptibility maps by applying expert knowledge in a GIS - based environment.....	1539

Θαλάσσια Γεωλογία
Marine Geology

Kapsimalis V., Talagani P., Panagiotopoulos I.P., Kaberi H., Rousakis G., Kanellopoulos Th.D., Iliakis S. and Hatzianestis I.: Pollution assessment of the Drapetsona Keratsini coastal seabed.....	1552
Petropoulos A., Androni A., Ntamkarelou T. and Anagnostou Ch.: Carbonate and organic carbon content in the recent sediments of Elefsis bay as indicators for the paleoenvironmental evolution of the system.....	1562
Poulos S., Ghionis G. and Petrakis S.: Investigating the existence of a “palaeo-foreshore” zone at Molos beach (Kefalos bay, Paros, Greece).....	1572
Tsoutsia A., Kapsimalis V., Poulos S., Paraskevopoyloy V. and Dassenakis E.: Assessment of heavy metals contamination in the coastal sediments of the broader area of Chios harbor (Aegean Sea).....	1581
Zanani I., Mitropoulos D., Zimianitis V., Ioakim Chr., Papadopoulos V. and Efthimiou G.: Marine geology data accessibility in the European Framework: The I.G.M.E. participation in the GEO-SEAS project.....	1590

TOMOΣ 4 / VOLUME 4

Ore Geology, Mining Technology and Economic Geology/Κοιτασματολογία, Μεταλλευτική Τεχνολογία και Οικονομική Γεωλογία
Engineering Geology and Geotechnical Engineering/Τεχνική Γεωλογία και Γεωτεχνική Μηχανική
Geothermics/Γεωθερμία
Exploration and Exploitation of Mineral Resources/Ερευνα και Εκμετάλλευση Ορυκτών Πόρων
Industrial Minerals and Rocks/Βιομηχανικά Ορυκτά και Πετρώματα
Energy Resources/Ενεργειακές Πρώτες Ύλες

Κοιτασματολογία, Μεταλλευτική Τεχνολογία και Οικονομική Γεωλογία
Ore Geology, Mining Technology and Economic Geology

Anagnostopoulos I., Lampropoulou P., Tzeveleku Th., Stivanakis V., Kastanaki A. and Papamantellos D.: Utilization trials of lignite solid byproducts of West Macedonia and Peloponnesus lignite fired power plants for the production of lightweight aggregates.....	1600
Anastassakis G.: Relationship between phosphates mineralogy and mineral processing - The case of Greece.....	1609
Eliopoulos D.G. and Economou-Eliopoulos M.: Palladium and platinum in hydrothermal systems: The case of porphyry-Cu systems and sulfides associated with ophiolite complexes.....	1618
Kalaitzidis S.: National reporting codes for the mineral industry: The case of JORC in Australia.....	1628
Kilias S.P., Naden J., Paktsevanoglou M., Giampouras M., Stavropoulou A., Apeiranthiti D., Mitsis I., Koutles Th., Michael K. and Christidis C.: Multistage alteration, mineralization and ore-forming fluid properties at the Viper (Sappes) Au-Cu-Ag-Te ore body, W. Thrace, Greece.....	1635
Perdikatsis V.: Quantitative determination of mineral matter in lignite by X-RAY spectrometry, using the Compton effect.....	1645
Trichos D., Alevizos G., Stratakis A., Petrakis E. and Galetakis M.: Mineralogical investigation and mineral processing of iron ore from the Skines area (Chania – West Crete).....	1652

Τεχνική Γεωλογία και Γεωτεχνική Μηχανική
Engineering Geology and Geotechnical Engineering

Andrianopoulos A., Saroglou H. and Tsiambaos G.: Rockfall hazard and risk assessment of road slopes.....	1664
Antoniou A. and Spyropoulos I.: The influence of rockmass properties at the plastic zone around a circular tunnel.....	1674
Asteriou P., Saroglou H. and Tsiambaos G.: Rockfalls: influence of rock hardness on the trajectory of falling rock blocks.....	1684
Chatziangelou M. and Christaras B.: Rock mass blastability dependence on rock mass quality.....	1694
Konstantopoulou G. and Spanou N.: Stability analysis of construction and demolition waste (CDW) deposits in the abandoned quarry of Profitis Ilias, Kozani, Greece.....	1706
Kotsanis D., Panagiotopoulos P., Rozos D. and Loupasakis C.: Engineering geological mapping of the Pallini urban area.....	1715
Ktena St. and Sabatakakis N.: Correlation between mechanical and petrographic parameters of sandstones.....	1726
Lekkas E., Alexoudi V. and Lialiaris I.: Reduction of rockfall risk of the Teleferik area of Santorini-Greece.....	1731
Loupasakis C., Lalos G. and Rozos D.: Safety assessment and remedial measures design for an extensive rockfall along the main road to Kimi, East Euboea, Greece.....	1739

Marinos V. and Goricki A.: The engineering geological behaviour of disturbed and weathered gneiss in slopes. The case of the “vertical axis” of Egnatia motorway, Komotini - Nymfea, Northern Greece.....	1749
Marinos V., Lazaridou S., Perleros V. and Sotiropoulou K.: Engineering geological behaviour of recent conglomerate deposits in dam foundation. The case of Agiokampos dam in Thessaly, Central Greece.....	1759
Minos-Minopoulos D., Pavlopoulos K., Apostolopoulos G., Dominey-Howes D. and Lekkas E.: Preliminary results of investigations of possible ground deformation structures in the early christian basilica, ancient Lechaion harbour, Corinth, Greece.....	1769
Mourtzas N.D., Gkiolas A. and Kolaiti E.: Stabilization of the limestone escarpment of the Skete of Osios Nikanoras under wet conditions due to future filling of the Ilarion dam’s reservoir.....	1779
Mourtzas N.D., Gkiolas A., Vakiris D. and Soulis V.: Investigation and mitigation of a failure at the Taxiarches canal of Mornos aqueduct.....	1792
Mourtzas N.D. and Sotiropoulos E.: Palaeotectonic environment and landslide phenomena in the area of Malakasa, Greece.....	1805
Pavlaki A., Meladiotis I. and Pavlakis P.: Applicability of the “Lefka Ori” Western Crete region “GeoFactors” Interaction Matrix (GFIM) as a key to understanding the engineering geological conditions.....	1820
Profitis E., Kapatos D., Chatzitheodoridis E., Xirouchakis D. and Loupasakis C.: Digital methods for measuring grain size parameters of aggregate–binder mixtures.....	1834
Rozos D., Tsangaratos P., Loupasakis C., Koumantakis I. and Markantonis K.: Assessing areas of slope instability through a spatial decision support system.....	1844
Rusi M. and Hoxha P.: CSD correction as a tool for estimating 3d block size distribution.....	1854
Saratsis G. and Stavropoulou M.: São Paulo cavern-shaft collapse viewed as a trap-door problem.....	1864
Saroglou H. and Kazilis N.: Engineering geological conditions of Klokova mountain, Greece.....	1872
Sideri D., Modis K. and Rozos D.: Application of geostatistical simulation models in the characterization of complex geological structures.....	1882
Stiakakis E., Vafidis A., Manoutsoglou E. and Vavadakis D.: Influence of geological and geotechnical conditions to design of a water reservoir in karst area.....	1892
Tsangaratos P. and Benardos A.: Applying artificial neural networks in slope stability related phenomena.....	1901

Γεωθερμιά
Geothermics

Chatziyiannis G. and Kavouridis Th.: The geothermal occurrence of Kapistri, Ierapetra area, Crete.....	1914
D’Alessandro W., Gagliano A.L., Kyriakopoulos K. and Parello F.: Hydrothermal methane fluxes from the soil at Lakki plain (Nisyros Island, Greece).....	1920

Kanellopoulos C.: Various morphological types of thermogenic travertines in Northern Euboea and Eastern Central Greece.....	1929
Papachristou M., Ungemach P. and Fytikas M.: Geothermal resource management-a reservoir simulation approach - the Paris Basin case.....	1939
Skianis G.Aim. and Vaiopoulos A.D.: Mapping hydrothermal alteration zones from spectral band ratios: A geostatistical approach based on the stable semivariogram model.....	1949

Έρευνα και Εκμετάλλευση Ορυκτών Πόρων
Exploration and Exploitation of Mineral Resources

Agioutantis Z., Komnitsas K. and Athousaki A.: Aggregate transport and utilization: Ecological footprint and environmental impacts.....	1960
Elia C., Konstantopoulos P., Maravelis A. and Zelilidis A.: The tectono-stratigraphic evolution of Eastern Mediterranean with emphasis on Herodotus Basin prospectivity for the development of hydrocarbon fields.....	1970
Kapageridis I., Apostolikas A., Pappas S. and Zevgolis I.: Use of mine planning software for the evaluation of resources and reserves of a sedimentary nickel deposit.....	1980
Mpalatsas I., Rigopoulos I., Tsikouras B., and Hatzipanagiotou K.: Evaluation of cretaceous limestones from the Aitolokarnania province (Western Greece) for their use as road aggregates in terms of their content in swelling clay minerals.....	1990
Pantelaki O., Bellis G. and Stamboliadis E.: The upgrading amenability of the phosphate deposits of Western Greece.....	2000
Shehu Ar. and Shehu Ag.: “Extractive Industries Transparency Initiative - EITI” Outlook on the exploitation of Albanian mineral resources.....	2010

Βιομηχανικά Ορυκτά και Πετρώματα
Industrial Minerals and Rocks

Bourliva A., Michailidis K., Sikalidis C. and Filippidis A.: Spectroscopic and thermal study of bentonites from Milos Island, Greece.....	2020
Galetakis M., Zourbakis V., Koinakis I., Leventakis K. and Alevizos G.: Aggregate production on the Island of Crete, Greece: Current production conditions and future perspective.....	2030
Leontakianakos G., Baziotis I., Profitis E., Chatzitheodoridis E. and Tsimas S.: Assessment of the quality of calcination of marbles from Thassos Island using Raman spectroscopy and X-Ray Diffraction.....	2040
Skliros V., Lampropoulou P.G., Tsikouras B., Hatzipanagiotou K., Christogerou A. and Angelopoulos G.N.: Characterization of a new laboratory ceramic product from industrial by-products as raw materials and caustic magnesia as additive.....	2050
Tseni X., Tsikouras B. and Hatzipanagiotou K.: Suitability assessment of carbonate rocks from the kataraktis passage member of the Olonos-Pindos Zone (Ileia prefecture, Western Greece) for industrial applications.....	2059
Xirouchakis D.: Correlations between mechanical and geometrical parameters in aggregates: A tool for quality assessment and control.....	2069

Xirouchakis D. and Bouzinos A.: Geological materials testing and uncertainty calculations: A simple GUM-based algorithm.....2081

Ενεργειακές Πρώτες Ύλες
Energy Resources

Koukouzas N., Katsimpari I. and Merachev D.: Simulation of underground coal gasification process in a Bulgarian coal field.....2090

Mpotziolis Ch., Kostopoulou S., Triantaphyllou M., Maravelis A. and Zelilidis A.: Depositional environments and hydrocarbon potential of the Miocene deposits of Zakynthos Island.....2101

Oskay R.G., Inaner H., Karayigit A.I. and Christanis K.: Coal deposits of Turkey: Properties and importance on energy demand.....2111

Papanicolaou C., Typou J., Ioakeim J., Kotis Th. and Foscolos A.: The prospect of using Greek lignite in an energy portfolio related to power generation.....2121

Rigakis N., Karakitsios V., Marnelis F. and Sotiropoulos Sp.: Geological solutions concluded by petroleum geochemical data in Western Greece.....2131