



INTERNATIONAL SYMPOSIUM
**PRESERVATION OF
MONUMENTS
& HISTORIC SITES**
SEPTEMBER 2026 | ATHENS, GREECE

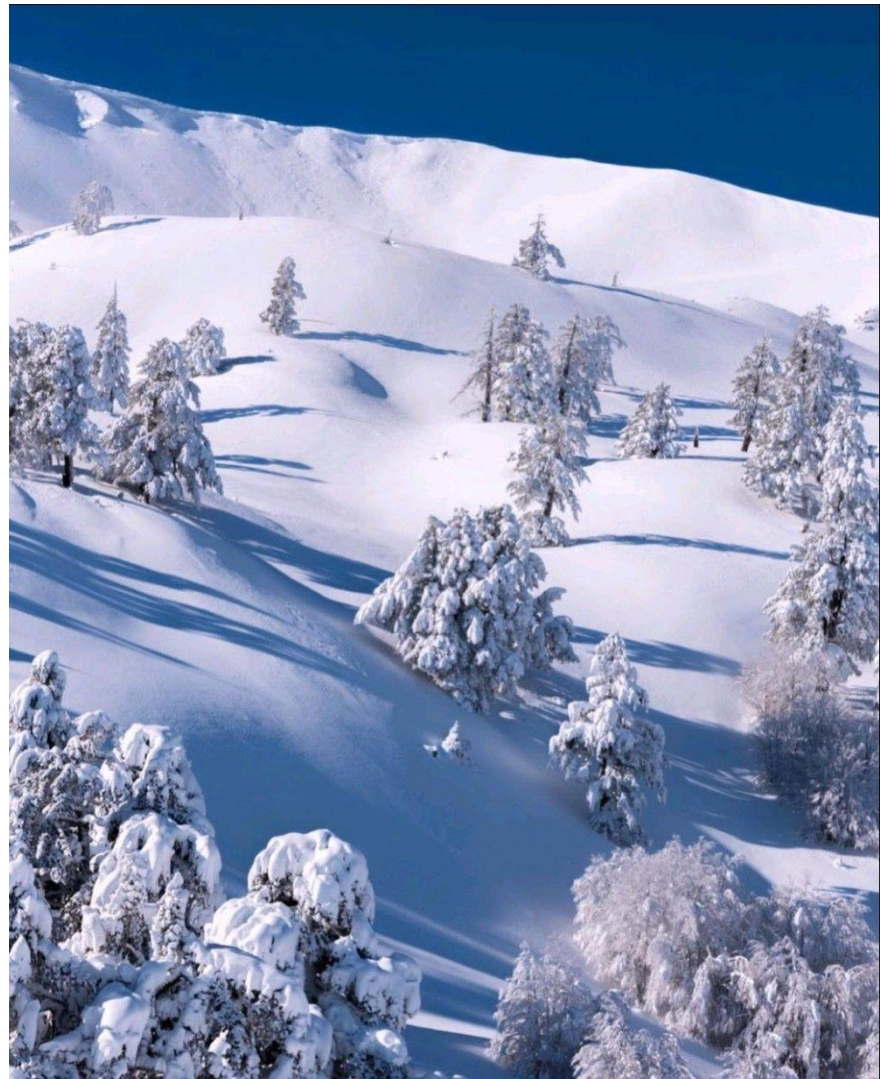


ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

Τα Νέα της Ε Ε Ε Ε Γ Μ

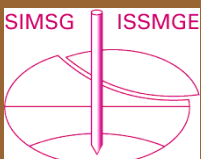
194

Αρ. 194 – ΔΕΚΕΜΒΡΙΟΣ 2024



Βασιλίτσα Γρεβενών

Καλή Χρονιά



ISSN: 2732-7248

Π Ε Ρ Ι Ε Χ Ο Μ Ε Ν Α

Άρθρα	3	Blackwell Earthmoving are the Platinum Sponsor for the Earthworks 2025 Conference	17
- Landslide Factor Optimization for Landslide Susceptibility Modeling	3	Προσεχείς Γεωτεχνικές Εκδηλώσεις:	18
- The Hardpan Boys: THE CLUE of the TILTING WALL	5	- International Conference on Advances in Structural And Geotechnical Engineering (ICASGE'25)	18
Νέα από τις Ελληνικές και Διεθνείς Γεωτεχνικές Ενώσεις	7	- GROUND ENGINEERING Piling and Foundations 2025	18
- Ελληνική Επιστημονική Εταιρεία Εδαφομηχανικής και Γεωτεχνική Μηχανικής	7	- ISRM Workshop on Soft Rocks (ISRM-WSR2025)	19
Ετήσια Γενική Συνέλευση της ΕΕΕΕΓΜ	7	- giz2025.org 6th International Conference on GIS and Geoinformation Zoning for Disaster Mitigation (GIZ)	20
Διαδικτυακή διάλεξη Δρ Εμμανουήλ Ροβίθη «Σεισμική συμπεριφορά πασσάλων: επιρροή της κινηματικής αλληλεπίδρασης εδάφους-πασσάλου και εφαρμογές»	11	- fOMLIG3 FLORENCE 2025 Third Workshop on the Future of Machine Learning in Geotechnics Ethics and intelligences for a geotechnical Renaissance	21
- Εθνικό Μετσόβιο Πολυτεχνείο Σχολή Μεταλλειολόγων - Μεταλλουργών Μηχανικών: Εκπαιδευτική Εκδρομή στην Κύπρο	12	- 6 ^ο Πανελλήνιο Συνέδριο Αντισεισμικής Μηχανικής και Τεχνικής Σεισμολογίας	21
- Ελληνική Επιτροπή Σηράγγων και Υπογείων Έργων Εορτή Αγίας Βαρβάρας, προστάτιδας των υπόγειων εργασιών και των ανατινάξεων	13	- LANDSLIDES 2026 Landslide Geo-Education and Risk (LaGER)	22
- International Society for Soil Mechanics and Geotechnical Engineering	13	Ενδιαφέροντα Γεωτεχνικά Νέα	26
ISSMGE News	13	- A new coal waste landslide at Cwmtillery in South Wales	26
Advances in Geotechnical Earthquake Engineering and Soil Dynamics	13	- The 25 January 2024 mine waste failure in the Hpakant mining area of Myanmar	26
Save the Date: PBD-V 2026 in Chile	13	- The crisis of sinking cities	26
Conference Report of the XVIII ECSMGE - Lisbon 2024	13	- How Venice was Built	27
- International Society for Rock Mechanics and Rock Engineering	14	- Hard Rock Rectangular Pipe Jacking Machine Breaks Through	27
Message from the President	14	Ενδιαφέροντα – Σεισμοί & Αντισεισμική Μηχανική	29
News	14	- Slow-slip earthquake in progress near Hawke's Bay, New Zealand	29
48th ISRM Online Lecture is online 2024-12-17	14	Ενδιαφέροντα – Γεωλογία	31
- International Tunnelling Association	14	- Earth from space: Wandering sand dunes circle gigantic 'eye' sculpted by ancient city-killer meteor in the Sahara	31
Scooped by ITA-AITES #112, 10 December 2024	14	Ενδιαφέροντα – Λοιπά	33
- British Tunnelling Society	14	- Project will utilise muons to assess aging infrastructure	33
World Tunnel Day 4 th December 2024	14	- Satellites reveal stunningly detailed maps of Earth's seafloors	33
- British Tunnelling Society Young Members	15	- The position of the magnetic north pole is officially changing. Why?	34
St Barbara's Day Quiz	15	- The 10 biggest science experiments on Earth	35
- International Geosynthetics Society	15	Νέες Εκδόσεις στις Γεωτεχνικές Επιστήμες	40
Holiday Message From The IGS President	15	Ηλεκτρονικά Περιοδικά	41
News	16		
Geosynthetics Research Center Stage At China Conference_December	16		
IGS Sustainability Video Now In Greek	16		
Greek Chapter Hosts Inaugural Educate the Educators Event	16		
IGS Romania Conference Returns After 18-year Absence	16		
Giroud Lecturer Named As Jie Han	16		
- British Geotechnical Association	16		
News	16		
Deadline Extended Call for Entries – 56th Cooling Prize Competition	16		
2024 Fleming Award Winner Announced	16		
The BGA website has been updated	17		
Tickets for the 63rd Rankine Dinner are now available	17		
The December 2024 issue of Ground Engineering is available on line	17		



Κόνιτσα

Landslide Factor Optimization for Landslide Susceptibility Modeling

Azemeraw Wubalem

Department of Geology, College of Natural and Computational Science, University of Gondar, Ethiopia
 Department of Earth Science, University of Turin, Turin Italy
azmeraw.wubalem@uog.edu.et
alubelw@gmail.com

1. Introduction

Landslide incidents become destructive natural hazards in the world, particularly in mountain regions, including Ethiopia. It causes the destruction of engineering structures, loss of properties, degradation of environments, and fatality. The event frequently occurred due to complex geological, geomorphological, climate changes, and unplanned land practice conditions. Thus, understanding the severity of landslides and their processes is crucial for identifying the most critical conditioning and triggering factors that help to predict landslide-prone and non-landslide-prone regions. This knowledge is essential for predicting, assessing, and mitigating the impacts and losses associated with landslide incidences (Wubalem, 2021). Mapping techniques, input datasets, and sizes of landslides control the quality of the landslide-predicting model. Therefore, landslide factor selection and landslide size analysis are the key steps in landslide susceptibility modeling. Although landslide prediction modeling is substantially conducted worldwide (Ado et al., 2022; Fang et al., 2021; Getachew and Meten, 2021), studies related to factor optimization particularly using the area under the receiver operating characteristics curve (AUC) in identifying the most relevant landslide factors for susceptibility modeling. This case study employed fieldwork, image analysis, GIS, and bivariate statistical methods to predict the spatial landslide susceptibility probability based on past landslide events. This finding provides insights into how landslide factors affect the quality of the prediction model and their effectiveness in engineering design and landslide mitigation strategies.

2. Materials and Method

A dataset comprising 12 landslide factors, and 712 landslides was compiled from literature, detailed fieldwork, and Google Earth Imagery analysis. These landslides were divided into training (70%) and validation (30%) datasets (Figure 1a). The relationship between past landslides and factors was analyzed using the frequency ratio (FR) method and ArcGIS 10.3.1 (ESRI, 2014). Then the degree of landslide factors was evaluated using the area under the receiver operating characteristics curve (AUC) by an overlaid method in the GIS environment. Landslide pixels for each landslide factor were extracted. Then the most effective landslide factors were determined. The landslide susceptibility maps were generated from the sum of weighted parameters before and after optimization under a raster calculator in a GIS environment.

3. Result and Discussion

Factor optimization using the AUC method identified six factors with AUC values > 0.5, while the remaining factors had AUC values < 0.5. The weighted factors were combined to create landslide susceptibility indexes (LSIs), categorized into five susceptibility zones of very low, low, moderate, high, and very high (Figure 1b) using the natural break classifica-

tion method, which is critical for safe engineering practice, risk assessment and land-use planning (Zhang et al., 2022). The susceptibility zones range from relatively safe regions with flat lands and strong lithology to high susceptibility zones with steep slopes, weak lithology, and low vegetation cover. ROC curves determined AUC values, with the FR model achieving a 66.41% prediction AUC before optimization. Post-optimization, the FR model demonstrated a success rate of 78.1% and a predictive rate of 73.5%, indicating improved performance (Figure 1 c & d). This underscores the influence of landslide factors on mapping accuracy and highlights the importance of optimization. The optimized FR model holds promise for researchers and decision-makers engaged in regional land use planning and landslide risk.

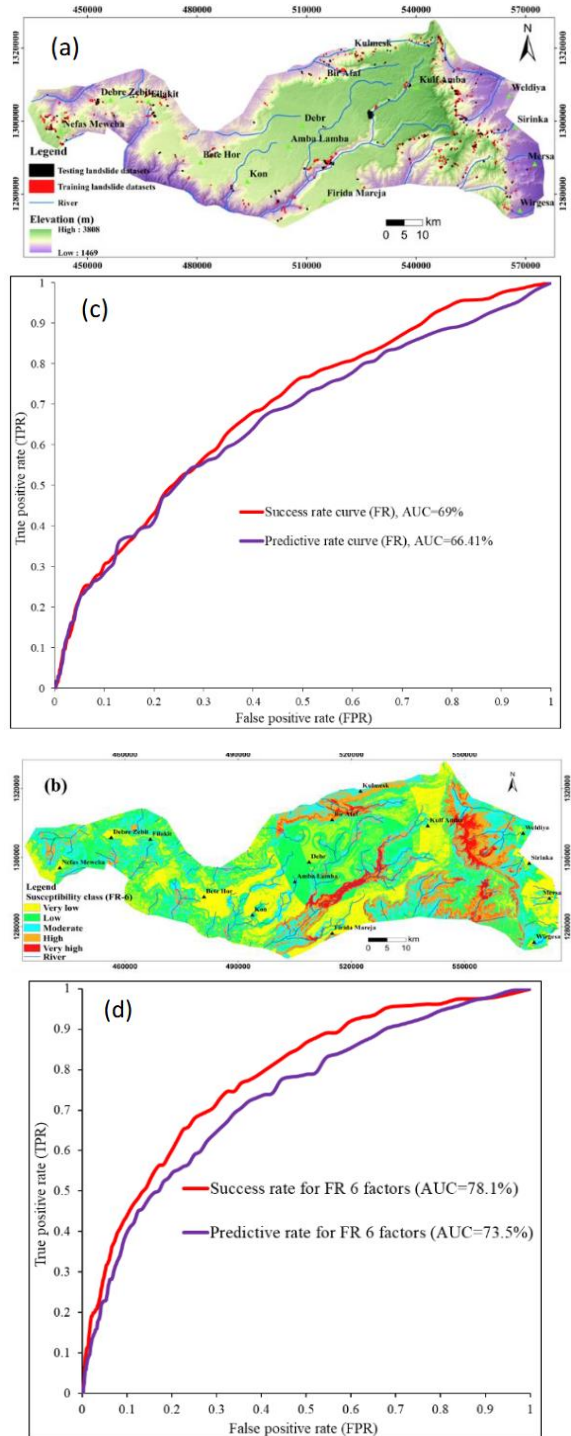


Figure 1 (a) landslide inventory (b) landslide susceptibility map (c) & (d) receiver operating characteristics curve before and after factor optimization (Wubalem et al., 2022).

4. Conclusion

The area under the curve (AUC) of the receiver operating characteristics curve was used to determine the most effective landslide factors whose values were greater than 0.5. The result indicates only six factors had AUC values greater than 0.5, but the other six factors scored less than 0.5 AUC values. Then the landslide susceptibility models were produced before and after factor optimization, and their quality was evaluated using AUC. The result indicates the quality of the model is improved after factor optimization. The result emphasizes that landslide factor optimization is a critical step in landslide susceptibility modeling for high-quality models. The frequent landslide occurrence needs attention, and it is crucial to conduct detailed geological engineering investigations before the construction of any engineering structures. Proper land practice and slope monitoring are recommendable strategies for safe and stable engineering structures.

Acknowledgments

There is no financial fund for this newsletter publication. I extend my deepest gratitude to my colleagues Mr. Belete Getahun, Mr. Yohannes Hailemariam, Mr. Alemu Mesele, Mr. Gashaw Tesfaw, Mr. Zerihun Dawit, and Mr. Endalkachew Goshe for their invaluable support during my work.

References

Ado M, Amitab K, Maji AK, Jasińska E, Gono R, Leonowicz Z, Jasiński M (2022). Landslide Susceptibility Mapping Using Machine Learning: A Literature Survey. *Remote Sensing*, 14(13). <https://doi.org/10.3390/rs14133029>.

Environmental Systems Research Institute (ESRI) (2014). ArcGIS Desktop: Release 10.3.1. Redlands, California: ESRI.

Fang Z, Wang Y, Peng L, Hong H (2021). A comparative study of heterogeneous ensemble-learning techniques for landslide susceptibility mapping. *International Journal of Geographical Information Science*, 35(2), 321–347. <https://doi.org/10.1080/13658816.2020.1808897>.

Getachew N, Meten M (2021) Weights of evidence modeling for landslide susceptibility mapping of Kabi-Gebro locality, Gundomeskel area, Central Ethiopia. *Geoenvironmental Disasters*, 8(1). <https://doi.org/10.1186/s40677-021-00177-z>.

Wubalem A (2021). Landslide susceptibility mapping using statistical methods in Uatzau catchment area, northwestern Ethiopia. *Geoenvironmental Disasters*, 8(1). <https://doi.org/10.1186/s40677-020-00170-y>.

Wubalem A, Getahun B, Hailemariam Y, Mesele A, Tesfaw G, Dawit Z, Goshe E (2022). Landslide Susceptibility Modeling Using the Index of Entropy and Frequency Ratio Method from Nefas-Mewcha to Weldiya Road Corridor, Northwestern Ethiopia. *Geotechnical and Geological Engineering*, 40(10), 5249–5278. <https://doi.org/10.1007/s10706-022-02214-6>.

Zhang J, Gao B, Huang H, Chen L, Li Y, Yang D (2022). SBAS-InSAR-Based Landslide Susceptibility Mapping Along the North Lancang River, Tibetan Plateau. *Frontiers in Earth Science*, 10. <https://doi.org/10.3389/feart.2022.901889>.

Author Responsibility Disclaimer During the preparation of this work, the author did not utilize ChatGPT or any similar software to generate content and took full responsibility for the publication's content. Additionally, the author is responsible for referencing all figures, tables, and information shared in this article.

Young Engineering Geologist - Article-6-10/2024 / IAEG
Connector E-News, December 18, 2024



The Hardpan Boys: THE CLUE of the TILTING WALL

One brisk spring day, famous teenage detectives and civil engineering students Frank and Joe Hardpan went for a walk around the city of Bayport. The youths had scarcely begun their stroll when a segmental retaining wall at the corner of Main and Oak Streets caught their eyes.

"Gee whiz, Joe!" Frank exclaimed. "That wall is really tilting out of alignment!"

"I'll say, Frank," Joe answered alertly. "Don't you think this could be a really swell civil engineering mystery?" He pulled out his trusty cell phone and began taking some pictures.



"Absolutely," Frank replied, "but we may already have the answer to it. Do you remember," he queried, "how we talked about retaining walls and their failure modes in our Introduction to Geotechnical Engineering course?"

"Holy smokes, that's right!" Joe responded. "I think we talked about them in our Foundations and Earth Pressures course, too." He scratched his head, his countenance puzzled. "But I can't remember what precisely we learned from Professor Gwyer." Mack Gwyer was one of the most esteemed professors in Bayport College's Civil Engineering Department and had taught the Hardpan brothers in their Intro to Geotech and Foundations courses.

"Well," Frank Hardpan declared, "Professor Gwyer taught us at length about how retaining wall problems often occur due to the build-up of water behind walls."

"Say, wait a minute, Frank," Joe chimed in, snapping his fingers, "look at these weepholes!" He pointed to several drainage pipes protruding from between the wall's concrete masonry units. "Only part of the wall has them, and that section is perfectly vertical. Yet the portion of the wall without weepholes –"

"– is the part that's overhanging!" Frank excitedly completed the thought. "Joe, I'm almost sure we're looking at a case of water build-up behind a retaining wall. This is something Professor Gwyer should know about."

"You bet!" Joe assented, grabbing one last photo. At once, the Hardpans were off to the college's Engineering Center, where Professor Gwyer was in his office eating lunch.

"Well, if it isn't two of my favorite students – the Hardpan brothers!" Mack Gwyer cried. "How can I be of assistance, lads?"

Frank and Joe sat down with Professor Gwyer at his office table and reviewed the facts of the case and Joe's pictures with him. The seasoned engineer listened patiently to the lads' story and reviewed their photos with keen interest. After the boys had finished and the last picture had been examined, the Professor leaned forward, pressing his index fingers together. "Well, chaps," Mack Gwyer stated with a grin, "I

believe your theory is right. It looks to me like you've cracked the case."

"Thank you, Professor," said Joe with polite embarrassment, "but we have just one question more. As you've seen, our pictures show that the wall has been backfilled with free-draining gravel. Why, then, would there be a water buildup occurring behind the wall, even along sections without weep-holes?"

"Good question," Professor Gwyer noted, cocking an eyebrow. He pulled a faded geotechnical report from his battered rolltop desk and showed it to the Hardpan brothers. "One possibility is that the part of the wall without weepholes is backfilled with natural soil, not gravel. This report is from when the college built its Rec Center several years ago, just a few blocks from this wall."

"Oh," murmured Frank, glancing over the site's boring logs, "I see what you mean, Professor. The natural soils at the Rec Center site are primarily silts and clays. Perhaps the wall site has similar *in situ* conditions, and the weephole-less section of the wall is backfilled with natural soil. In that case, the soil's rather impermeable nature likely prevents the free drainage of water that builds up behind that part of the wall."

"Correct, Frank," Mack Gwyer observed. "Plus, even if that part of the wall has gravel backfill, it may be getting fouled." The professor noted the boys' perplexed looks and elaborated, "Fouling is when the void spaces of normally free-draining materials such as gravel become clogged with fine particles. The gravel could be breaking into smaller pieces on its own; topsoil could be washing down into the void spaces; underlying silts and clays could be migrating upward into the gravel voids. Regardless, the result is the same. The voids get clogged, the gravel is no longer free-draining, and water builds up behind the wall."

Professor Gwyer reached across his table and reclaimed the geotechnical report. "Well, fellows, I need to go to coach the GeoWall team's practice. Good work in solving this little caper."

"Thank you, Professor. We're lucky to have your technical guidance close at hand," Joe Hardpan replied as he and his brother headed out the office door.

"It's just fortunate," Frank turned and added with a grin, "that both Joe and I wanted to go for a constitutional today. Otherwise, we might never have noticed *The Clue of the Tilting Wall*."

(Geo-Institute, 17 Dec 2024,
<https://www.geoinstitute.org/news/hardpan-boys-clue-tilting-walltilting-wall>)

ΝΕΑ ΑΠΟ ΤΙΣ ΕΛΛΗΝΙΚΕΣ ΚΑΙ ΔΙΕΘΝΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΝΩΣΕΙΣ



ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

Ετήσια Γενική Συνέλευση της ΕΕΕΕΓΜ

Η ετήσια Γενική Συνέλευση της ΕΕΕΕΓΜ διεξήχθη την Δευτέρα 9 Δεκεμβρίου 2024 στην Αίθουσα του Ορυκτολογικού Μουσείου γαιο-ORAMA της Σχολής Μηχανικών Μεταλλείων-Μεταλλουργών στην Πολυτεχνειούπολη Ζωγράφου του Εθνικού Μετσόβιου Πολυτεχνείου στην Αθήνα.

Θέματα της γενικής συνέλευσης ήταν:

1. Πεπραγμένα Εκτελεστικής Επιτροπής,
2. Ενημέρωση για τρέχοντα ζητήματα και δραστηριότητες,
3. Οικονομικός απολογισμός 9ου Πανελληνίου Συνεδρίου Γεωτεχνικής Μηχανικής,
4. Τυχόν άλλα θέματα.

ΕΚΘΕΣΗ ΠΕΠΡΑΓΜΕΝΩΝ (06/10/2023 – 08/12/2024)

1. ΕΙΣΑΓΩΓΗ – Η ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ

Η τρέχουσα Γενική Συνέλευση είναι απολογιστική πεπραγμένων της περιόδου 06/10/2023 – 08/12/2024. Η σύνθεση της εκτελεστικής επιτροπής σε όλη περίοδο έχει ως εξής:

Πρόεδρος: Μιχάλης Μπαρδάνης,

A' Αντιπρόεδρος: Σταυρούλα Κοντοῦ

B' Αντιπρόεδρος: Νίκος Κλήμης

Γενικός Γραμματέας: Γιώργος Μπελόκας

Ταμίας: Γιάννης Ζευγώλης

Έφορος: Τάσος Αναστασιάδης

Μέλη: Γιώργος Ντούλης

Μαρίνα Πανταζίδου

Χρήστος Τσατσάνιφος

A' Αναπληρωματικό Μέλος: Δημήτρης Πιπιλάκης

B' Αναπληρωματικό Μέλος: Χρήστος Στρατάκος

Λοιπά αναπληρωματικά μέλη: Χάρης Λάμαρης

Πρόδρομος Ψαρρόπουλος

Η Εκτελεστική Επιτροπή κατά την περίοδο από της εκλογής της μέχρι σήμερα συνεδρίασε 4 φορές, όλες διαδικτυακά. Στις συνεδριάσεις και τις δραστηριότητες της Ε.Ε. έχει δοθεί δυνατότητα συμμετοχής και στα αναπληρωματικά μέλη, τα οποία προσκαλούνται σε τακτική βάση.

2. ΝΕΑ ΜΕΛΗ

Κατά την περίοδο εγκρίθηκε η εγγραφή 16 νέων μελών

3. ΕΚΔΗΛΩΣΕΙΣ ΤΗΣ ΕΕΕΕΓΜ

3.1 9ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Το 9ο Πανελλήνιο Συνέδριο Γεωτεχνικής Μηχανικής διοργανώθηκε από την Ελληνική Επιστημονική Εταιρεία Εδαφομηχανικής και Γεωτεχνικής Μηχανικής (ΕΕΕΕΓΜ) μεταξύ 4 και 6 Οκτωβρίου 2023 στην Αθήνα, στο Συνεδριακό Κέντρο Πανεπιστημιούπολης Αρχαίου Ελαιώνα του Πανεπιστημίου Δυτικής Αττικής. Παράλληλα με το συνέδριο διεξήχθη τεχνική έκθεση με εκθέτες εταιρείες του κλάδου. Αναλυτικός απολογισμός φαίνεται στο αντίστοιχο συνημμένο έγγραφο.

Στην οργανωτική και επιστημονική επιτροπή συμμετείχαν 22 μέλη, ενώ στις κρίσεις των άρθρων συνέδραμαν και 27 πρόσθετα μέλη της ΕΕΕΕΓΜ. Στο συνέδριο διοργανώθηκαν 17 συνεδρίες, ανακοινώθηκαν 115 άρθρα, τα οποία υποβλήθηκαν όλα σε διπλή ανώνυμη κρίση. Είχαν υποβληθεί περί τις 200 περιλήψεις και συνολικά 3 άρθρα δεν εγκρίθηκαν κατά τη διαδικασία της κρίσης.

Κατά την διάρκεια του 9ου Πανελληνίου Συνεδρίου πραγματοποιήθηκε η 14η Αθηναϊκή Διάλεξη από τον Paul W. Mayne, Geosystems Consultant, Emeritus Professor- Geosystems Engineering Group, School of Civil & Environmental Engineering, Georgia Institute of Technology, Atlanta, GA USA, με τίτλο "Geotechnical Site Characterization Using Shear Wave Velocity", η οποία είναι αναρτημένη το κανάλι youtube της ΕΕΕΕΓΜ.

Πραγματοποιήθηκαν επίσης δύο προσκεκλημένες ομιλίες από ξένους ομιλητές: α) τον Jorge G. Zornberg Ph.D., P.E., F. ASCE, Brunswick-Abernathy Regents Professor, The University of Texas at Austin, Past-President, International Geosynthetics Society, με τίτλο ομιλίας "Geosynthetic Applications in Railways and Roadways", η οποία είναι αναρτημένη το κανάλι youtube της ΕΕΕΕΓΜ, και β) την Loretta Batali, Professor of Soil Mechanics and Foundation Engineering, Technical University of Civil Engineering Bucharest, Romania, με τίτλο "Aspects related to slope stability of waste landfills – case studies and numerical modelling". Ειδικότερα, η ομιλία του Jorge G. Zornberg πραγματοποιήθηκε χάρη στη συνεργασία με τον Ελληνικό Σύνδεσμο Γεωσυνθετικών Υλικών. Ειδικές ομιλίες δόθηκαν επίσης και από 12 Έλληνες συναδέλφους, Α. Ρίτσο, Ε. Ρήγα, Π. Νομικό, Γ. Διδασκάλου, Δ. Πιπιλάκη, Ρ. Κουρκουλή, Α. Παπαδημητρίου, Α. Κωμοδρόμο, Μ. Μπαρδάνη, Γ. Μπελόκας, Δ. Λουκίδη, Ε. Γαρίνη. Στο πλαίσιο του συνεδρίου πραγματοποιήθηκε ειδική συνεδρία προς τιμήν του Παύλου Μαρίνου, η οποία είναι αναρτημένη το κανάλι youtube της ΕΕΕΕΓΜ, με ομιλίες από τους συναδέλφους Γ. Τσιαμπάο, Γ. Στούμπο, Ν. Καζίλη και Β. Μαρίνο.

Στο συνέδριο εγγράφηκαν 376 συνέδριοι οι οποίοι κατανέμονται ως ακολούθως: α) φοιτητές: 69 (οι 48 με εγγραφή early-bird), β) νέοι επιστήμονες: 63 (οι 40 με εγγραφή early-bird), γ) τακτικοί συνέδριοι: 187 (οι 100 με εγγραφή early-bird), δ) εκθέτες και χορηγοί: 57.

Κατά τη διάρκεια του συνεδρίου έγινε παράλληλη τεχνική έκθεση στην οποία συμμετείχαν 16 εταιρείες του χώρου τις οποίες και ευχαριστούμε θερμά για τη συμμετοχή τους. Επίσης, το συνέδριο είχε έναν χρυσό, έναν αργυρό και τέσσερις χάλκινους χορηγούς, τους οποίους επίσης ευχαριστούμε θερμά.

Στο κλείσιμο του συνεδρίου έγινε παρουσίαση από τον Αντιπρόεδρο και πρώην Πρόεδρο της ΕΕΕΕΓΜ κ. Χρήστο Τσατσάνιφο του επόμενου Παγκοσμίου Συνεδρίου για τη Γεωτεχνική Μηχανική και Μνημεία που θα γίνει στην Ελλάδα, και δόθηκαν τιμητικές πλακέτες στον κ. Μιχάλη Παχάκη, πρώην Πρόεδρο της ΕΕΕΕΓΜ, και τον κ. Πάνο Βέττα, πρώην Αντιπρόεδρο της ΕΕΕΕΓΜ, για την πολυετή προσφορά τους στην ΕΕΕΕΓΜ.

Το συνέδριο έκλεισε με θετικό απολογισμό περί τις 5000€ (καθαρό ποσό χωρίς ΦΠΑ).

3.2 15η ΑΘΗΝΑΪΚΗ ΔΙΑΛΕΞΗ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Στις 24 Οκτωβρίου 2024 διοργανώθηκε η 15η Αθηναϊκή Διάλεξη Γεωτεχνικής Μηχανικής, η οποία δόθηκε από R. Kerry Rowe OC, NAE, FREng, FRAS, Distinguished University Professor Queen's University, Kingston, Canada, με τίτλο "Some challenges with old and new dams" στην Κεντρική Αίθουσα του Συνεδριακού Κέντρου της Πανεπιστημίου Αρχαίου Ελαιώνα του ΠΑΔΑ με ταυτόχρονη ζωντανή αναμετάδοση, η οποία είναι ήδη αναρτημένη στο κανάλι της ΕΕΕΕΓΜ στο youtube. Θα γίνει ειδική αναφορά για το κανάλι youtube της ΕΕΕΕΓΜ σε επόμενη παράγραφο.

Επαναλήφθηκε για 2η «**Συζήτηση την επόμενη μέρα**» την Παρασκευή 25 Οκτωβρίου, 11:00πμ στο Ορυκτολογικό Μουσείο γαιο-ΟΡΑΜΑ, της Σχολής Μεταλλειολόγων Μηχανικών-Μεταλλουργών του ΕΜΠ. Στη συζήτηση ο ομιλητής απάντησε σε ερωτήσεις φοιτητών, ενώ συμμετείχαν μέλη από την ακαδημαϊκή και επιστημονική κοινότητα γεωτεχνικής μηχανικής.

3.3 ΔΙΑΔΙΚΤΥΑΚΕΣ ΔΙΑΛΕΞΕΙΣ

Η ΕΕΕΕΓΜ προσαρμόστηκε στις απαιτήσεις της εποχής, λόγω και της πανδημίας, και άρχισε να διεξάγει διαδικτυακές διαλέξεις μέσω της πλατφόρμας "ms teams live events" ελεύθερα προσβάσιμες σε όλους όσοι έχουν διαθέσιμο τον σύνδεσμο. Έχουν αναρτηθεί στο κανάλι youtube της ΕΕΕΕΓΜ. Οι ακόλουθες διαδικτυακές διαλέξεις διοργανώθηκαν αποκλειστικά από την ΕΕΕΕΓΜ:

22/5/2024 : «Γεωτεχνικός σχεδιασμός μεγάλων έργων υπό σεισμικά και ανακυκλικά φορτία» Αμαλία Γιαννακού

20/11/2024 : «Η εφαρμογή της αριθμητικής ανάλυσης στην αξιολόγηση και στον σχεδιασμό μονοπασάλων για υπερκτία αιολικά πάρκα» Αγγελική Γραμματικοπούλο

3.4 ΔΙΑΛΕΞΕΙΣ ΜΕ ΦΥΣΙΚΗ ΠΑΡΟΥΣΙΑ

Η ΕΕΕΕΓΜ διοργάνωσε ή συνδιοργάνωσε τις ακόλουθες διαλέξεις με φυσική παρουσία:

26/11/2024: «2nd generation of Eurocode 7 – Key changes and evolution of pile foundations design» Loretta Batali

4 ΜΕΛΛΟΝΤΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ

4.1 4TH INTERNATIONAL SYMPOSIUM ON GEOTECHNICAL ENGINEERING FOR THE PRESERVATION OF MONUMENTS AND HISTORIC SITES

Το επόμενο συνέδριο της TC 301 Preservation of Historic Sites θα φιλοξενηθεί από την ΕΕΕΕΓΜ με πρόεδρο της οργανωτικής επιτροπής τον Δρ. Χρ. Τσατσάνιφο και θα διοργανωθεί στην Αθήνα 16 έως 18/09/2026. Το συνέδριο

Η προθεσμία υποβολής είναι στις 31/3/2025. Η ιστοσελίδα του συνεδρίου είναι η <https://tc301-athens.com/>

4.2 ΠΡΩΤΟ ΡΟΥΜΑΝΟ – ΕΛΛΗΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΕΠΙ ΣΕΙΣΜΙΚΗΣ ΚΑΙ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Θα διοργανωθεί το πρώτο Ρουμανο-Ελληνικό Σεμινάριο επί Σεισμικής και Γεωτεχνικής Μηχανικής που θα διεξαχθεί στις 27 Μαρτίου 2025 στο Βουκουρέστι της Ρουμανίας. Στο σεμινάριο συμμετέχουν με παρουσιάσεις τα μέλη μας:

- Γιώργος Γκαζέτας, Ομότιμος Καθηγητής ΕΜΠ
- Κυριαζής Πιπιλάκης, Ομότιμος Καθηγητής ΑΠΘ
- Γιώργος Μπελόκας, Επίκουρος Καθηγητής ΠΑΔΑ

ενώ από Ρουμανικής πλευράς οι συνάδελφοι:

- Radu Văcăreanu, Καθηγητής Technical University of Civil Engineering, Bucharest

- Loretta Batali, Καθηγήτρια Technical University of Civil Engineering, Bucharest
- Christian Arion, Καθηγητής Καθηγητής Technical University of Civil Engineering, Bucharest

Η εκδήλωση θα εστιάσει σε κοινά ζητήματα που αφορούν τον τρόπο αντιμετώπισης προβλημάτων σεισμικής και γεωτεχνικής μηχανικής στις δύο χώρες και στην εφαρμογή του επερχόμενου Ευρωκώδικα 7 – 2η γενιά, ενώ αναμένεται να δώσει ευκαιρίες για συναντήσεις μεταξύ μελών των δύο επιστημονικών εταιρειών δημιουργώντας ευκαιρίες για περαιτέρω συνεργασία. Σχεδιάζεται δε ήδη και η επόμενη αντίστοιχη εκδήλωση που θα διεξαχθεί αυτή τη φορά στην Ελλάδα.

Η εκδήλωση αποτελεί προϊόν συνεργασίας που έχει καλλιεργηθεί τα τελευταία χρόνια μεταξύ της ΕΕΕΕΓΜ και της αντίστοιχης Ρουμανικής Επιστημονικής Εταιρείας και εντάσσεται στο πλαίσιο των προσπαθειών της ΕΕΕΕΓΜ για κοινές δράσεις με τις γειτονικές χώρες, με τις οποίες μοιραζόμαστε παρόμοια φύσης προβλήματα.

4.3 ΔΙΑΔΙΚΤΥΑΚΕΣ ΔΙΑΛΕΞΕΙΣ

17/12/2024 : «Σεισμική συμπεριφορά πασσάλων: επιρροή της κινηματικής αλληλεπίδρασης εδάφους-πασσάλου και εφαρμογές» Ε. Ροβίθης

5 ΕΚΔΟΣΕΙΣ

Συνεχίζεται η μηνιαία έκδοση του ενημερωτικού δελτίου «ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ», την οποία επιμελείται εξ ολοκλήρου ο πρώην Πρόεδρος της ΕΕΕΕΓΜ Δρ Χρ. Τσατσάνιφος. Μέσα στην περίοδο αναφοράς εκδόθηκαν δεκαεννέα (13) τεύχη (αρ. 180 έως 192).

6 ΠΑΡΟΥΣΙΑ ΣΤΟ ΔΙΑΔΙΚΤΥΟ – ΑΛΛΗΛΕΠΙΔΡΑΣΗ ΜΕ ΤΑ ΜΕΛΗ ΚΑΙ ΓΕΝΙΚΟΤΕΡΑ ΤΗ ΓΕΩΤΕΧΝΙΚΗ ΚΟΙΝΟΤΗΤΑ

Η Ελληνική Επιστημονική Εταιρεία Εδαφομηχανικής και Γεωτεχνικής Μηχανικής διατηρεί κανάλι με μαγνητοσκοπημένες διαλέξεις που έχει διοργανώσει. Ο σύνδεσμος για το κανάλι είναι:

<https://www.youtube.com/@thechannelofhssmge5899>.

Στον ίδιο σύνδεσμο μπορείτε να πατήσετε το πλήκτρο «εγγραφή» και να εγγραφείτε στο κανάλι μας ενισχύοντας το έτσι, αλλά και την ίδια την επιστημονική μας εταιρεία.

Την οργάνωση και τη ζωντανή τεχνική υποστήριξη των διαδικτυακών διαλέξεων έχει αναλάβει ο Γενικός Γραμματέας Γ. Μπελόκας, οι οποίες στη συνέχεια αποθηκεύονται και διαμορφώνονται στην τελική τους μορφή από το μέλος μας Δ. Τσούτσα και αφού ελεγχθούν από τον Πρόεδρο Μ. Μπαρδάνη και τον ίδιο τον/την ομιλητή/ομιλήτρια, *ο/η οποίος/α δίνει γραπτώς τη συναίνεσή του/της για την ανάρτηση*, αναρτώνται στο κανάλι και καθίστανται δημόσια προσβάσιμες. Εκτός αυτών, λαμβάνεται μέριμνα για την μαγνητοσκόπηση διαλέξεων μετά από πρόσκληση σε συνέδρια που διοργανώνει η ΕΕΕΕΓΜ, ή Αθηναϊκές Διαλέξεις, ή διαλέξεις στην αίθουσα του ΤΕΕ, και αυτές οι μαγνητοσκοπημένες διαλέξεις αφού υποβληθούν στην ίδια διαδικασία επεξεργασίας και ελέγχου αναρτώνται στο κανάλι.

Αυτή τη στιγμή υπάρχουν ανηρτημένες 26 διαλέξεις/συνεδρίες, 23 υπό την ομάδα «βίντεο» και 3 υπό την ομάδα «ζωντανά». Μέχρι τις 8/12/2024 καταγράφονται:

- 6525 προβολές που αντιστοιχούν σε
- 1204 ώρες προβολής με μέσο χρόνο προβολής κάθε διάλεξης για το 12% περίπου της διάρκειάς της
- στο κανάλι έχουν γίνει μέχρι σήμερα εγγραφή 308 διαφορετικά προφίλ στα οποία αναλογεί το 44% του συνολικού χρόνου προβολής.

Εκκρεμεί η ανάρτηση των διαλέξεων:

- Αγγελικής Γραμματικοπούλου
- Loretta Batali
- Μάνου Ροβίθη (μόλις γίνει στις 17/12/2024)

Το κανάλι μέχρι σήμερα ακολουθεί τους εξής κανόνες:

- Αναρτάται μόνο επιστημονικό περιεχόμενο (διαλέξεις και προσφωνήσεις διαλέξεων)
- Αναρτάται περιεχόμενο που έχει παραχθεί μόνο από διοργάνωση ή συνδιοργάνωση της ΕΕΕΕΓΜ
- Οι αναρτήσεις γίνονται μόνο κατόπιν έγγραφης συναίνεσης του ομιλητή/της ομιλήτριας και έλεγχο από τον ίδιο/ίδια του προς ανάρτηση αρχείου πριν την ανάρτησή του
- Στις αναρτήσεις είναι απενεργοποιημένα τα σχόλια για την προστασία των ομιλητών/ομιλητριών μας από ενδεχόμενο κακόβουλο ή κακοπροαίρετο σχολιασμό.

Η ΕΕΕΕΓΜ έχει από το 2016 προφίλ στον ιστότοπο επαγγελματικής δικτύωσης LinkedIn το οποίο συντηρεί και διαχειρίζεται ο Πρόεδρος της ΕΕΕΕΓΜ Μ. Μπαρδάνης. Στον λογαριασμό μπορούν να συνδεθούν μέλη της ΕΕΕΕΓΜ και άλλοι συνάδελφοι από την Ελλάδα και το Εξωτερικό που έχουν επίσης προφίλ στον ίδιο ιστότοπο. Προς αποφυγή εσφαλμένων εντυπώσεων ή κακής χρήσης της σύνδεσης με αυτό το προφίλ, διευκρινίζεται και στο διαδίκτυο και εδώ ότι αποτελεί «Το προφίλ της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής & Γεωτεχνικής Μηχανικής (ΕΕΕΕΓΜ), αντιπροσώπου για την Ελλάδα της Διεθνούς Ένωσης Εδαφομηχανικής & Γεωτεχνικής Μηχανικής. Το προφίλ αυτό φτιάχτηκε για την ταχύτερη διάδοση των νέων της επιστημονικής μας εταιρείας προς τα μέλη της και άλλους ενδιαφερομένους. Η δημιουργία επαφής με το παρόν προφίλ δεν συνιστά απόκτηση ιδιότητας μέλους της ΕΕΕΕΓΜ ή της ISSMGE. Για όσους επιθυμούν κάτι τέτοιο, ισχύουν οι προβλέψεις του καταστατικού για τη διαδικασία και τις προϋποθέσεις εγγραφής στην ΕΕΕΕΓΜ». Το προφίλ στο LinkedIn αυτή τη στιγμή ακολουθείται από 5405 προφίλ, ένας πολύ μεγάλος αριθμός. Να σημειωθεί πως στην προηγούμενη ΓΣ (10ος 2023) τα συνδεδεμένα προφίλ ήταν περί τα 4200, συνεπώς περί τα 1200 προφίλ εγγράφηκαν σε 14 μήνες. Η αύξηση, η οποία κρίνεται ιδιαίτερα σημαντική, οφείλεται στην ενεργό παρουσία με συνεχείς ανακοινώσεις και έχει έντονη αλληλεπίδραση και με το κανάλι youtube.

Η ιστοσελίδα της ΕΕΕΕΓΜ (www.hssmge.gr) εξακολουθεί να είναι υποτυπώδης, γίνεται όμως προσπάθεια για να βελτιωθεί σύντομα. Αναρτώνται τακτικά τα ενημερωτικά δελτία της ΕΕΕΕΓΜ.

Αθήνα, 8 Δεκεμβρίου 2024
Για την Εκτελεστική Επιτροπή

Ο Πρόεδρος
Μ. Μπαρδάνης

Ο Γενικός Γραμματέας
Γ. Μπελόκας

Απολογισμός 9ου Πανελληνίου Συνεδρίου Γεωτεχνικής Μηχανικής

1. Εισαγωγή

Το 9ο Πανελλήνιο Συνέδριο Γεωτεχνικής Μηχανικής διοργανώθηκε από την Ελληνική Επιστημονική Εταιρεία Εδαφομηχανικής και Γεωτεχνικής Μηχανικής (ΕΕΕΕΓΜ) μεταξύ 4 και 6 Οκτωβρίου 2023 στην Αθήνα, στο Συνεδριακό Κέντρο Πανεπιστημιούπολης Αρχαίου Ελαιώνα του Πανεπιστημίου Δυτικής Αττικής. Παράλληλα με το συνέδριο διεξήχθη τεχνική έκθεση με εκθέτες εταιρείες του κλάδου.

2. Οργανωτική Επιτροπή και Κριτές Εργασιών

Πρόεδρος του Συνεδρίου

Μ. Μπαρδάνης, Πρόεδρος Ε.Ε.Ε.Ε.Γ.Μ.

Οργανωτική και Επιστημονική Επιτροπή

Γ. Μπελόκας, Γενικός Γραμματέας Ε.Ε.Ε.Ε.Γ.Μ.
Γ. Ντούλης, Ταμίας Ε.Ε.Ε.Ε.Γ.Μ.
Α. Αναγνωστόπουλος, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Π. Βέττας, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Γ. Γκαζέτας, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Ι. Ζευγώλης, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Β. Ξενάκη, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Μ. Πανατζίδου, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Μ. Παχάκης, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Κ. Πλυτάς, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Χρ. Στρατάκος, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Χρ. Τσατσάνιφος, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Ν. Ρούσσο, Πρόεδρος Ελληνικής Επιτροπής Σηράγγων & Υπόγειων Έργων
Ζ. Ρ. Παπαχατζάκη, Πρόεδρος Ελληνικής Επιτροπής Μεγάλων Φραγμάτων
Ι. Μάρκου, Πρόεδρος Ελληνικού Συνδέσμου Γεωσυνθετικών Υλικών
Κ. Γεωργιάδης, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
Δ. Πιτιλάκης, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
Στ. Κοντοέ, Πανεπιστήμιο Πατρών
Ν. Κλήμης, Δημοκρίτειο Πανεπιστήμιο Θράκης
Π. Ντακούλας, Πανεπιστήμιο Θεσσαλίας
Δ. Λουκίδης, Πανεπιστήμιο Κύπρου

Εκτός από τα μέλη της οργανωτικής και επιστημονικής επιτροπής, στις κρίσεις των εργασιών συμμετείχαν και οι ακόλουθοι συνάδελφοι (κατ' επιλογή και προτροπή των μελών της οργανωτικής και επιστημονικής επιτροπής):

Σ. Αποστολάκη
Π. Αστερίου
Β. Βαντόλας
Α. Βρατσικίδης
Κ. Γεωργιάδης
Π. Γιούτα-Μήτρα
Α. Γραμματικοπούλου
Α. Δεληβέρης
Δ. Εγγλέζος
Α. Θεοχάρης
Α. Καπουνιάρης
Ζ. Καρατζά
Α. Καρατζέτζου
Σ. Καραφαγκά
Ε.Ι. Κουτσουπάκη
Γ. Κρούπη
Ο.Τ. Κτενίδου
Α.Χ. Λιβανίδου
Κ. Μάκρας
Κ. Μπαντραλέξης
Ε. Πεταλά
Ι. Πιλαλίδης
Ε. Ροβίθης
Δ. Σωτηριάδης
Π. Τσουνάμη
Ε. Φίλογλου
Ε. Ψαρουδάκης

Η εταιρεία ERASMUS παρείχε τις υπηρεσίες της για την οργανωτική υποστήριξη του συνεδρίου.

3. Εναρκτήριοι χαιρετισμοί

Στο 9ο Πανελλήνιο Συνέδριο Γεωτεχνικής Μηχανικής απηύθυναν χαιρετισμούς κατά την έναρξη ο Πρόεδρος του Εθνικού Συμβουλίου Βιομηχανίας Υποδομών και Κατασκευών (ΕΣΒ-ΥΚ), Ομότιμος Καθηγητής ΕΜΠ, Σέργιος Λαμπρόπουλος, η Πρόεδρος της Κυπριακής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής (ΚΕΕΕΓΜ), Έλενα Σοφοκλέους, και ο Γενικός Γραμματέας του Συνδέσμου Ελληνικών Εταιρειών-Γραφείων Μελετών και Ταμίας της ΕΕΕΕΓΜ, Γιώργος Ντούλης, ενώ την Έναρξη του Συνεδρίου και Προσφώνηση του ομιλητή της 14ης Αθηναϊκής Διάλεξης Γεωτεχνικής Μηχανικής έκανε ο Πρόεδρος της ΕΕΕΕΓΜ, Μ. Μπαρδάνης.

4. Ομιλίες

Κατά την διάρκεια του 9ου Πανελληνίου Συνεδρίου πραγματοποιήθηκε η 14η Αθηναϊκή Διάλεξη από τον Paul W. Mayne, Geoengineering Consultant, Emeritus Professor- Geosystems Engineering Group, School of Civil & Environmental Engineering, Georgia Institute of Technology, Atlanta, GA USA, με τίτλο "Geotechnical Site Characterization Using Shear Wave Velocity". Η 14η Αθηναϊκή Διάλεξη μαγνητοσκοπήθηκε και θα αναρτηθεί εντός των ημερών στο κανάλι που διατηρεί η ΕΕΕΕΓΜ στο youtube (https://www.youtube.com/@thechannelofhssmqe5899/vid_eos).

Πραγματοποιήθηκαν επίσης δύο ομιλίες από ξένους ομιλητές που προσκλήθηκαν:

- τον Jorge G. Zornberg Ph.D., P.E., F. ASCE, Brunswick-Abernathy Regents Professor, The University of Texas at Austin, Past-President, International Geosynthetic Society, με τίτλο ομιλίας "Geosynthetic Applications in Railways and Roadways", και

- την Loreta Batali, Professor of Soil Mechanics and Foundation Engineering, Technical University of Civil Engineering Bucharest, Romania, με τίτλο "Aspects related to slope stability of waste landfills – case studies and numerical modelling"

Η ομιλία του Jorge G. Zornberg πραγματοποιήθηκε χάρη στη συνεργασία με τον Ελληνικό Σύνδεσμο Γεωσυνθετικών Υλικών. Επίσης μαγνητοσκοπήθηκε και έχει αναρτηθεί ήδη στο κανάλι που διατηρεί η ΕΕΕΕΓΜ στο youtube (https://www.youtube.com/@thechannelofhssmqe5899/vid_eos).

Ειδικές ομιλίες δόθηκαν επίσης και από 12 Έλληνες συναδέλφους:

- Ρίτσος Α. «Πρεσσιόμετρο Ménard (MPM) – Εφαρμογή στην Ελλάδα»

- Ρήγα Ε. «Σεισμικές δράσεις σχεδιασμού στον υπό αναθεώρηση Ευρωκώδικα 8. Πρόταση για το Ελληνικό Εθνικό Πρόσάρτημα»

- Νομικός Π. «Προς μία ρεαλιστική μοντελοποίηση της μηχανικής συμπεριφοράς της βραχομάζας»

- Διδασκάλου Γ. «Παρουσίαση του επίπεδου Ντιλατομέτρου τύπου Marcheti, της χρήσης του στο πεδίο, της αξιολόγησης των μετρήσεων του και του συνδυασμού του με άλλα όργανα και δοκιμές στο πλαίσιο της γεωτεχνικής αξιολόγησης»

- Πιτιλάκης Δ. «Γεωτεχνική σεισμική μόνωση»

- Κουρκουλής Ρ. «Προκλήσεις κατά τον σχεδιασμό υπεράκτιων ανεμογεννητριών: Ο ρόλος της θεμελίωσης»

- Παπαδημητρίου Α. «Αλληλεπίδραση γειτονικών κατασκευών με ή χωρίς βελτίωση εδάφους έναντι σεισμικής ρευστοποίησης»

- Κωμοδρόμος Α. «Συμβολή στην ανάλυση και τον σχεδιασμό θεμελιώσεων με πασσάλους με χρήση προηγμένων αριθμητικών μεθόδων»

- Μπαρδάνης Μ. «Τα έργα αποκατάστασης της ευστάθειας στο

πρανές της Διώρυγας της Κορίνθου από την πλευρά της Πελοποννήσου μετά τις καταπτώσεις του 2021»

- Μπελόκας Γ. «Ευρωκώδικας 7 – 2η Γενιά: Αλλαγές και Προκλήσεις στην Ανάλυση και στο Σχεδιασμό Γεωτεχνικών Έργων»

- Λουκίδης Δ. «Ογκομετρικές παραμορφώσεις μη κορεσμένων εδαφών λόγω μεταβολής της περιεχόμενης υγρασίας»

- Γαρίνη Ε. «Σεισμική ακολουθία 6ης Φεβρουαρίου 2023 στην Τουρκία: Διάρρηξη, καταγραφές, εγγύς-του-ρήγματος φαινόμενα, γεωτεχνικές βλάβες»

5. Ειδική συνεδρία για τον Παύλο Μαρίνο

Στο πλαίσιο του συνεδρίου διοργανώθηκε ειδική συνεδρία προς τιμήν του Παύλου Μαρίνου. Στο πλαίσιο αυτής έγιναν οι ακόλουθες ομιλίες:

- Τσιαμπάος Γ. «Παύλος Μαρίνος: Ένας ξεχωριστός Πανεπιστημιακός Δάσκαλος και Ερευνητής»

- Στούμπος Γ. «Η εικοσαετής προσφορά του Παύλου Μαρίνου στα έργα Μετρό και η παρακαταθήκη του-Η τεχνική γεωλογία στον γεωτεχνικό σχεδιασμό του Μετρό»

- Καζιλής Ν. «Έργα και Ημέρες του αείμνηστου Καθηγητή Παύλου Μαρίνου στον χώρο των μεγάλων κατασκευών (Φραγμάτων – Ταμιευτήρων, Σήραγγων, Αντιμετώπιση κατολισθήσεων κτλ)»

- Μαρίνος Β. «Παύλος Γ. Μαρίνος: Ο Πατέρας, ο Μέντορας, ο Επιστήμονας»

Ολόκληρη αυτή η συνεδρία μαγνητοσκοπήθηκε και έχει αναρτηθεί ήδη στο κανάλι που διατηρεί η ΕΕΕΕΓΜ στο youtube (https://www.youtube.com/@thechannelofhssmqe5899/vid_eos). Επίσης στα πρακτικά του 9ου Πανελληνίου Συνεδρίου περιλαμβάνεται και το πλήρες βιογραφικό και βιβλιογραφία του Παύλου Μαρίνου, όπως συντάχθηκε από τον Βασίλη Μαρίνο τον οποίο και ευχαριστούμε θερμά.

Στο τέλος της συνεδρίας επιδόθηκε Τιμητική Πλακέτα της ΕΕΕΕΓΜ για την προσφορά του Παύλου Μαρίνου στον γιο του Βασίλη Μαρίνο.

6. Συνεδρίες

Στο συνέδριο διοργανώθηκαν 17 συνεδρίες με ειδικές ομιλίες και άρθρα:

Συνεδρία I Έρευνα πεδίου & εργαστήριου

Συνεδρία II Εδαφοδυναμική I

Συνεδρία III Βραχομηχανική

Συνεδρία IV Βελτιώσεις Εδαφών

Συνεδρία V Εδαφοδυναμική II

Συνεδρία VI Αλληλεπίδραση εδάφους-κατασκευής

Συνεδρία VII Καταστατικά προσομοιώματα

Συνεδρία VIII Άοπλα και Οπλισμένα Επιχώματα

Συνεδρία IX Θεμελιώσεις I

Συνεδρία X Περιβαλλοντική Γεωτεχνική / Θέματα Διδασκαλίας

Συνεδρία XI Ευστάθεια πρανών/κατολισθήσεις

Συνεδρία XII Σήραγγες & Υπόγεια Έργα - Βαθειές Αντιστηρίξεις

Συνεδρία XIII Ευρωκώδικες - Εφαρμογές Γεωσυνθετικών Υλικών

Συνεδρία XIV Θεμελιώσεις II

Συνεδρία XV Εδαφοδυναμική III - Φράγματα

Συνεδρία XVI Αβεβαιότητα, Αξιοπιστία, και Διακινδύνευση στη Γεωτεχνική

Συνεδρία XVII Γεωτεχνική μηχανική και μνημεία

7. Άρθρα

Στα πρακτικά του συνεδρίου περιελήφθησαν 115 άρθρα τα οποία υποβλήθηκαν όλα σε διπλή ανώνυμη κρίση. Είχαν υποβληθεί περί τις 200 περιλήψεις και συνολικά 3 άρθρα δεν εγκρίθηκαν κατά τη διαδικασία της κρίσης.

Τα άρθρα παρουσιάστηκαν πρακτικά όλα κατά τη διάρκεια του συνεδρίου και περιελήφθησαν όλα στα πρακτικά τα οποία δόθηκαν στους συνέδρους εντός δίσκων μνήμης USB και αναρτήθηκαν σε σύνδεσμο στο διαδίκτυο, ο οποίος απεστάλη με μήνυμα ηλεκτρονικού ταχυδρομείου στα μέλη και τους φίλους της ΕΕΕΕΓΜ.

8. Σύνεδροι

Στο συνέδριο εγγράφηκαν 376 σύνεδροι οι οποίοι κατανέμονται ως ακολούθως:

- Φοιτητές: 69 (οι 48 με εγγραφή early-bird)
- Νέοι επιστήμονες: 63 (οι 40 με εγγραφή early-bird)
- Τακτικοί σύνεδροι: 187 (οι 100 με εγγραφή early-bird)
- Εκθέτες και χορηγοί: 57

9. Τεχνική Έκθεση

Κατά τη διάρκεια του συνεδρίου έγινε παράλληλη τεχνική έκθεση στην οποία συμμετείχαν 16 εταιρείες του χώρου τις οποίες και ευχαριστούμε θερμά για τη συμμετοχή τους.

- ΕΥΡΩΤΕΧΝΙΚΑ ΑΕ
- ΟΜΙΛΟΣ ΤΕΧΝΙΚΩΝ ΜΕΛΕΤΩΝ ΟΤΜ ΑΤΕ
- ARGO-E GROUP
- Wykeham FarranceHellenplan
- ΕΔΑΦΟΣ Σύμβουλοι Μηχανικοί Α.Ε.
- THRACE GROUP
- MACON
- NAMA LAB ΑΕ
- SCIENTACT ΑΕ
- Geosysta ΕΠΕ
- ΝΕΟΤΕΚ
- ΕΔΑΦΟΜΗΧΑΝΙΚΗ ΑΤΕ
- 3DR ENGINEERING SOFTWARE
- GEOSTAND Α.Ε.
- Rope Work
- GEOLOGISMIKI

10. Χορηγίες

Χρυσός χορηγός στο συνέδριο ήταν η Ελληνική Επιστημονική Εταιρεία Σηράγγων και Υπογείων Έργων (ΕΕΣΥΕ). Αργυρός χορηγός ήταν η εταιρεία ΠΛΑΣΤΙΚΑ ΘΡΑΚΗΣ. Χάλκινοι χορηγοί του συνεδρίου ήταν οι εταιρείες ΑΚΤΩΡ, ΑΡΧΙΜΗΔΗΣ, ΕΔΑΦΟΜΗΧΑΝΙΚΗ & GEOSTAND. Η ΕΕΕΕΓΜ εκφράζει τις θερμές της ευχαριστίες προς όλους τους χορηγούς του συνεδρίου.

11. Παρουσίαση επόμενου Παγκόσμιου Συνεδρίου για τη Γεωτεχνική Μηχανική και Μνημεία

Στο κλείσιμο του συνεδρίου έγινε παρουσίαση από τον Αντιπρόεδρο και πρώην Πρόεδρο της ΕΕΕΕΓΜ κ. Χρήστο Τσατσάνιφο του επόμενου Παγκόσμιου Συνεδρίου για τη Γεωτεχνική Μηχανική και Μνημεία που θα γίνει στην Ελλάδα πιθανότατα τον Σεπτέμβριο του 2026 στην Αθήνα.

12. Τιμητικές Πλακέτες

Στο κλείσιμο του συνεδρίου δόθηκαν τιμητικές πλακέτες στον κ. Μιχάλη Παχάκη, πρώην Πρόεδρο της ΕΕΕΕΓΜ, και τον κ.

Πάνο Βέττα, πρώην Αντιπρόεδρο της ΕΕΕΕΓΜ, για την πολυετή προσφορά τους στην ΕΕΕΕΓΜ.

13. Οικονομικός Απολογισμός

Το συνέδριο έκλεισε με θετικό απολογισμό περί τις 5000€ (καθαρό ποσό χωρίς ΦΠΑ)

Διαδικτυακή διάλεξη Τρίτη 17.12.2024

Δρ Εμμανουήλ Ροβίθη

Σεισμική συμπεριφορά πασσάλων: επιρροή της κινηματικής αλληλεπίδρασης εδάφους-πασσάλου και εφαρμογές

Περίληψη Διάλεξης

Υπό το πρίσμα της δυναμικής αλληλεπίδρασης εδάφους-θεμελίωσης-ανωδομής, τα σεισμικά φορτία που δέχονται οι πάσσαλοι μπορούν να διακριθούν σε δυο γενικούς τύπους: (α) *Αδρανειακά* φορτία κεφαλής τα οποία προέρχονται από την ταλάντωση της ανωδομής και (β) *Κινηματικά* φορτία τα οποία επιβάλλονται υπό μορφή καταναγκασμού από το περιβάλλον έδαφος κατά την διάδοση των σεισμικών κυμάτων. Αναφορικά με τον δεύτερο τύπο φόρτισης, οι πάσσαλοι λόγω της δυσκαμψίας τους ενδέχεται να μην μπορούν να παρακολουθήσουν την εδαφική παραμόρφωση, με αποτέλεσμα να αναπτύσσουν πρόσθετες κινηματικές ροπές και να διαφοροποιούν την σεισμική κίνηση που τελικά εισάγεται στην βάση της κατασκευής σε σχέση με την εδαφική κίνηση στο ελεύθερο πεδίο.

Τα δυο παραπάνω κινηματικά φαινόμενα παρουσιάζονται στην διάλεξη αρχικά μέσα από καταγραφές, διαθέσιμες υπολογιστικές μεθόδους και σχετικές κανονιστικές διατάξεις. Στη συνέχεια, το φυσικό πρόβλημα διατυπώνεται μέσω μιας μέσης κατανομής της εδαφικής παραμόρφωσης εντός του ενεργού μηκούς του πασσάλου υπό κινηματική φόρτιση. Το υπό μελέτη σύστημα αναφέρεται σε πάσσαλο δεσμευμένης κεφαλής εντός εδάφους του οποίου η δυσστημσία περιγράφεται από γενικευμένο νόμο μεταβολής με το βάθος. Καλύπτονται έτσι περιπτώσεις ομοιογενών εδαφών και σχηματισμών συνεχούς ανομοιογένειας. Παρουσιάζονται αναλυτικές σχέσεις υπολογισμού για την κινηματική ροπή στην κεφαλή του πασσάλου και για τον δείκτη κινηματικής αλληλεπίδρασης σε οριζόντια ταλάντωση. Ο τελευταίος χρησιμοποιείται για την ποσοτικοποίηση της επιρροής των πασσάλων στην σεισμική κίνηση στη βάση της κατασκευής. Για τον σκοπό αυτό, υπολογίζονται λόγοι φασματικών τιμών επιτάχυνσης μεταξύ της κεφαλής του πασσάλου και της επιφάνειας του εδάφους.

Οι προβλέψεις των προτεινόμενων λύσεων εξετάζονται για ένα ευρύ φάσμα διαμηκτικών παραμορφώσεων του εδάφους και συγκρίνονται με αποτελέσματα ακριβέστερων αριθμητικών αναλύσεων. Αναδεικνύεται ο ρόλος κρίσιμων παραμέτρων όπως η κατανομή της εδαφικής ανομοιογένειας, η διάμετρος του πασσάλου και τα χαρακτηριστικά της σεισμικής κίνησης και παρουσιάζονται παραδείγματα εφαρμογής στο πλαίσιο του αντισεισμικού σχεδιασμού των πασσάλων.

Σύντομο Βιογραφικό Σημείωμα Ομιλητή

Ο Εμμανουήλ Ροβίθης είναι Επίκουρος Καθηγητής στο Εργαστήριο Εδαφομηχανικής και Θεμελιώσεων του Τμήματος Πολιτικών Μηχανικών του Δημοκρίτειου Πανεπιστημίου Θράκης. Οι προπτυχιακές και μεταπτυχιακές του σπουδές στο Τμήμα Πολιτικών Μηχανικών του Αριστοτέλειου Πανεπιστημίου Θεσσαλονίκης περιλαμβάνουν διπλώματα Πολιτικού Μηχανικού (2002), μεταπτυχιακό τίτλο ειδίκευσης στον Αντισεισμικό Σχεδιασμό Τεχνικών Έργων (2003) και διδακτορικό δίπλωμα (2008) στο αντικείμενο της δυναμικής αλληλεπίδρασης εδάφους-θεμελίωσης-κατασκευής. Από το 2010 έως το 2022 κατείχε θέση Ερευνητή στο Ινστιτούτο Τεχνικής Σεισμολογίας



και Αντισεισμικών Κατασκευών (Μονάδα έρευνας Ι.Τ.Σ.Α.Κ. του Ο.Α.Σ.Π.) ενώ το 2021 έγινε δεκτός ως Επισκέπτης Ερευνητής με υποτροφία στο Τμήμα Πολιτικών Μηχανικών του Πανεπιστημίου "Luigi Vanvitelli" στην Aversa της Ιταλίας. Το επιστημονικό του έργο έχει δημοσιευτεί έως σήμερα σε πάνω από 90 άρθρα σε διεθνή περιοδικά, κεφάλαια βιβλίων, πρακτικά συνεδρίων και τεχνικές εκθέσεις. Στην ερευνητική του εμπειρία περιλαμβάνεται η συμμετοχή του σε 20 Εθνικά και Ευρωπαϊκά Ερευνητικά Προγράμματα, μέρος των οποίων έχει υλοποιηθεί υπό την επιστημονική του ευθύνη. Στο πλαίσιο των ερευνητικών του δραστηριοτήτων έχει ασχοληθεί συστηματικά με την συμπεριφορά συστημάτων εδάφους-θεμελίωσης-κατασκευής υπό δυναμική και σεισμική φόρτιση σε συνεργασία και με ερευνητικές υποδομές όπως IFSTTAR (Nantes), Schofield Centre (Cambridge), UKCRIC SoFSI (Bristol), EuroProteas (Thessaloniki). Κατά την θητεία του ως Ερευνητής στο Ι.Τ.Σ.Α.Κ. υπήρξε υπεύθυνος εγκατάστασης και λειτουργίας ειδικού δικτύου επιταχυνσιογράφων (Kalochori Accelerometric Network) για την μελέτη της αλληλεπίδρασης εδάφους-κατασκευών σε πραγματική κλίμακα. Είναι μέλος τεχνικών και επιστημονικών φορέων, μεταξύ των οποίων της Επιτροπής του ΕΛΟΤ TC67/WG7 "Ευρωκώδικας 7 - Γεωτεχνικός Σχεδιασμός", του Ε.Τ.Α.Μ., της Ε.Ε.Ε.Ε.Γ.Μ., της Ι.Σ.Σ.Μ.Γ.Ε., και της Ι.Γ.Σ. Έχει επίσης αποτελέσει μέλος πολλών επιστημονικών και οργανωτικών επιτροπών σε εθνικά και διεθνή συνέδρια και είναι κριτής σε 30 διεθνή περιοδικά.



Εθνικό Μετσόβιο Πολυτεχνείο Σχολή Μεταλλειολόγων-Μεταλλουργών Μηχανικών Εκπαιδευτική Εκδρομή στην Κύπρο

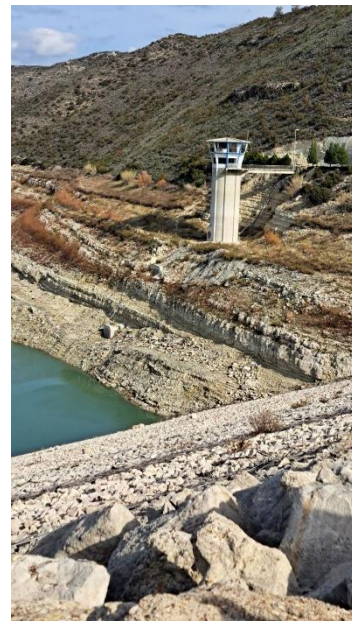
Η Εκπαιδευτική Εκδρομή των φοιτητών της κατεύθυνσης Γεωτεχνολογίας, της Σχολής Μεταλλειολόγων - Μεταλλουργών Μηχανικών του ΕΜΠ, στην Κύπρο πραγματοποιήθηκε με ευτυχία για Τρίτη συνεχόμενη χρονιά!!! Μια εκδρομή που γίνεται πλέον θεσμός.

Κατολίσθηση Πισσουρίου
Κατολίσθηση Άρμου
Φράγμα Κουρή
Γεωπάрко Τροόδους
Ορυχείο Αμιάντου
Μεταλλείο χαλκού Σκουριώτισσας & Αρχαίες σκωρίες
Μεταλλουργικές Εγκαταστάσεις της Hellenic Minerals

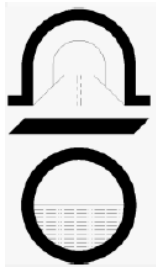
Ευχαριστώ θερμά τον Αγαπητό συνάδελφο Δημήτρη Λουκίδη, Καθηγητή του Πανεπιστημίου Κύπρου, που για Τρίτη συνεχής χρονιά υποστήριξε με τις πολύτιμες γνώσεις του την εκπαιδευτική μας εκδρομή. Επίσης ευχαριστώ τον Διδάκτορά μου Πλούταρχο Τζάμπογλου για την συνδρομή του την πρώτη μέρα της επίσκεψής μας και τον αγαπητό μου φίλο Μάρκο Φουτά

για την υποστήριξή του κατά την περιήγησή μας στην κατολίσθηση Πισσουρίου.

Να είμαστε καλά και του χρόνου να κάνουμε πολλές όμορφες δράσεις για τα αγαπητά μας παιδιά.



[Constantinos Loupasakis • Professor at National Technical University of Athens](#) 18.12.2024



ΕΛΛΗΝΙΚΗ ΕΠΙΤΡΟΠΗ ΣΗΡΑΓΓΩΝ και ΥΠΟΓΕΙΩΝ ΕΡΓΩΝ

Εορτή Αγίας Βαρβάρας, προστάτιδας των υπόγειων εργασιών και των ανατινάξεων

Η Ελληνική Επιτροπή Σηράγγων και Υπογείων Έργων γιορτάζει την Αγία Βαρβάρα, προστάτιδα των υπόγειων εργασιών και των ανατινάξεων και εύχεται σε όλα τα μέλη της χρόνια πολλά και ασφαλή εργασία στα υπόγεια.



Στη φωτογραφία, η εντυπωσιακή υπόγεια (βάθος περί τα 240 μ) εκκλησία στη Ρουμανία, η οποία κατασκευάστηκε προς τιμήν της Αγίας Βαρβάρας εξ ολοκλήρου μέσα σε δημόσιο αλατωρυχείο πλησίον της πόλης Targu Ocna.



International Society for Soil Mechanics and Geotechnical Engineering

ISSMGE News

www.issmge.org/news

Advances in Geotechnical Earthquake Engineering and Soil Dynamics

Adda Athanasopoulos-Zekkos / [TC203](https://www.issmge.org/news) / 03-12-2024

Several TC203 members are participating next week at the 8th International Conference on recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics. The conference will take place in Guwahati, India, on December 11-14 2024.

TC203 Vice Chair Prof. Sebastiano Foti is one of the [Plenary Speakers](#), as well Profs. Choudhury, Kaynia, Yasuda and Towhata. Profs. Stuedlein and Nimbalkar are [Theme Speakers](#).

For more information on the conference, you can visit [here](#).

Save the Date: PBD-V 2026 in Chile

Adda Athanasopoulos-Zekkos / [TC203](https://www.issmge.org/news) / 04-12-2024

The **2026 International Conference on Performance-Based Design in Earthquake Geotechnical Engineering (PBD-V) will be held November 4 to 6, 2026 in Puerto Varas, Chile**. Topics for the PBD-V 2026 conference will include:

- Case histories on site effects, embankments and slopes, earth and tailings dams, surface fault rupture, MSWLF performance, and other geohazards.
- Underground structures and soil-structure interaction, including shallow foundations and pile foundations.
- Soil investigation with field and laboratory testing for performance-based design.
- Dynamic characterization and modeling of soils for performance-based design.
- Numerical analyses for performance-based design.
- Methodology of performance-based design.
- Recent developments in PBD codes.
- Advances in soil liquefaction.

PBD-V 2026 is organized by the Chilean Society of Geotechnical Engineering (SOCHIGE) and the International Society for Soil Mechanics and Geotechnical Engineering. [View the conference website for more information.](#)

Conference Report of the XVIII ECSMGE - Lisbon 2024

Pedro Pinto 18 December 2024

You may find some interest in the Conference Report of the XVIII ECSMGE -Lisbon 2024.

Link to download <https://filesender.fccn.pt/?s=download&token=6efc437f-0265-42d3-a454-781dbff4284d>





Message from the President

Dear ISRM colleagues,

As we approach the end of 2024, it is a moment to reflect on the past year’s activities. First, I would like to express my gratitude to all members who have actively participated in various aspects of our society’s activities. It is wonderful to see many activities and achievements, and I hope that these achievements will carry over into future activities.

In 2024, the ISRM sponsored several events, including one International Symposium, two Regional Symposia, three Specialized Conferences, two JTC Conferences, and two Commission Conferences. Congratulations to all for the successful organization of these events, and my heartfelt thanks to the organizing committees for their dedicated efforts.

During the International Symposium held last September in New Delhi, India, the Rocha Medal Award Lecture and the Franklin Lecture were presented. In the Early Career Forum, eight young scholars from Asian region showcased intriguing research. Additionally, Prof. Krishna Panthi and Dr. Muriel Gasc delivered invaluable presentations on professional career development. A tribute session was also held in honor of the late Dr. Eda Quadros, our former president.

[Click here to continue reading.](#)

News

<https://www.isrm.net>

48th ISRM Online Lecture is online 2024-12-17

The 48th ISRM Online Lecture “New frontiers for deep geothermal energy: some rock mechanics issues...” by Dr. Sylvie Gentier from France is now online.

[Click here to visit the lecture page](#) and submit your questions to the lecturer over the next few days.



News

<https://about.ita-aites.org/news>

Scooped by ITA-AITES #12, 10 December 2024

[The incredible £111m tunnel that's the world's most remote infrastructure project | Faroe Islands](#)

[Metro Vancouver undertaking water supply projects | Canada](#)

[647 meters down: Progress on Hanoi’s Nhon-Hanoi metro tunnel | Vietnam](#)

[Global hydropower projects advance resilience | Australia & Lesotho](#)

[Major tunnelling breakthrough on \\$300m program | New Zealand](#)

[Inside the \\$20trillion Transatlantic Tunnel that would connect US to the UK in 54 minutes](#)

[Renovation of Heinenoord Tunnel Wins 2nd Prize at the ITA | Netherlands](#)

[Tunnelling contracts awarded for Saudi Arabia’s new city](#)

[DMRC Phase 4 Expansion: 2.65 km long Tughlakabad-Aerocity underground tunnel completed | India](#)

[Shield tunnelling tech success at Chongtai Yangtze River Tunnel | China](#)





Here we also confirmed the launch of our newest Chapter, Guatemala, and revealed IGS Colombia will be hosting the 6th GeoAmericas in 2028. But members won't have to wait that long as important events resume soon with GeoSint 2025 in April, GeoAsia8 in June, and EuroGeo8 in September. I'd also urge you to attend one of the industry's premier conferences on geotechnical engineering in Kentucky, USA, in March - Geotechnical Frontiers - which is organized by an IGS liaison group, the Geosynthetic Materials Association.

BTSYM
St Barbara's Day Quiz
Come and Join Us

DETAILS This December, the BTSYM will be hosting a pub quiz to commemorate St. Barbara's Day. Attendees will have a chance to network with peers and there will be an inaugural award of the BTSYM St Barbara's Day trophy. This event is open to both BTS/BTSYM members.

WHEN 05 December 2024, 6:00pm onwards

WHERE Institution of Civil Engineers One Great George Street, London, SW1P 3AA

NOTES Refreshments are sponsored by Herrenknecht AG

Trophy donated by Dirk Kern & Richard Dexer of Herrenknecht AG

IGS President Samuel R. Allen



You can find out more about all of these on the [Events](#) and [News](#) sections of our website. Talking of which, our communications efforts continue to grow. We are approaching gaining another 1,000 LinkedIn followers to nearly 7,000, and published some 100 stories to our online news page over 2024.

This year we also celebrate the Council's approval to recognize the IGS Diversity Task Force as a full-time, open, IGS Diversity Committee. We are a stronger Society when we are inclusive of all our membership and welcoming to all stakeholders in our discipline. I'd also like to extend special congratulations to Dr. Jie Han, our very own IGS Treasurer, for being selected as the [next Giroud Lecturer](#).

Our budget for 2025 was approved by the IGS Council, which reflects a dedication to our vision with focus on education and outreach missions. These include projects such as the [IGS Sustainability Calculator](#), which is gaining adoption and use, the [IGS Handbook](#) currently at the editing stage, and our IGS Professional Development Courses, which are being formulated.

Of course, none of this would be possible without the support and drive of IGS staff and fellow IGS Officers. I want to say a special thank you by highlighting the work of these dedicated people.

John Kraus is a stellar Executive Director for the IGS, providing guidance, content and reviews to all IGS work efforts. His steady leadership and refined communication skills serve to parent many of our tasks to completion. He has proven invaluable in his work ethic and organizational wisdom.

Our dedicated IGS Secretariat Manager **Elise Oatman** has evolved this important IGS staff position with elements of meeting documentation, record keeping, digital news and website work. This is accomplished while providing non-stop service to our global membership. She is a joy to work with for all of our leadership and global members.

I also want to honor our very special IGS Officers - all of whom juggle busy work and family commitments at the same time. I feel very lucky to have such talented and dedicated leaders to work with.

Your IGS Vice President **Edoardo Zannoni** is a 'Superman' who, amongst many tasks, has taken on the very special mission of IGS Chapter support. With help from staff, Regional Activity Chairs and fellow Officers, he has been meeting Chapter leadership and targeting IGS support where needed. His encouragement and leadership in this role is vital to a healthy IGS and we are better for his efforts.

Your IGS Secretary General **Dr. Laura Carbone** is a special source of perspective, joy and dedication to the IGS. Of critical importance is her leadership of the inaugural Diversity Task Force. She has welcomed Task Group members, instituted IGS policies and held events to open our Society and



www.geosyntheticssociety.org

Holiday Message From The IGS President

Dear IGS Colleagues,

As we approach the end of another busy year I wanted to reflect on our year together, the initiatives we look forward to continue developing in 2025, and celebrating the outstanding people that help make it all happen.

This year we once again enjoyed a busy program of networking, education outreach and global conferencing, including the flagship GeoAmericas 2024 early in the year. It was a joy to meet new and existing members, hear about the issues important to you and how the IGS can support those.

promote diversity, inclusion and equity. I'm delighted the Council has now approved a newly established Diversity Committee, open to all interested members.

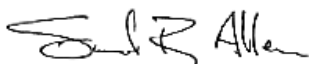
Your IGS Treasurer **Dr. Jie Han** has steered the finances of the IGS with expertise and vision, and routinely updates the IGS Council with detailed financial reports. The IGS is on firm financial footing thanks to the leadership of our membership to adjust the annual IGS dues at the last General Assembly.

And finally, your Immediate Past IGS President **Dr. Chung-sik Yoo** provides a wealth of experience and wisdom to assist in navigating the IGS and its many programs. He remains a dedicated contributor to our great Society.

In this special time of the holiday season, as we say goodbye to 2024 and welcome 2025, I celebrate these shining stars of leadership whose wisdom, experience and dedication make the IGS stronger every day.

But most of all, I celebrate you, our IGS members, new and old, for your daily work expanding our industry and contributing to a better world. I wish all of you a special time with your families and loved ones, and look forward to seeing many of you during a very successful new year.

Yours in service,



Samuel (Sam) Allen
IGS PRESIDENT
INTERNATIONAL GEOSYNTHETICS SOCIETY

News

[Geosynthetics Research Center Stage At China Conference](#) December 2, 2024

Nearly 1,000 delegates from 10 countries across four continents gathered in China last month for the 11th Chinese National Conference on Geosynthetics. Hosted by the [Read More](#) »



[IGS Sustainability Video Now In Greek](#) December 4, 2024

A Greek language version of the 'Geosynthetics for Sustainable Development' video is now available. The video is a bite-sized introduction to the current global environmental [Read More](#) »



[Greek Chapter Hosts Inaugural Educate the Educators Event](#) December 10, 2024

IGS Greece held its first IGS Educate the Educators (EtE) program with two new features it recommends adopting at similar events. Some 33 academic professors, [Read More](#) »

[IGS Romania Conference Returns After 18-year Absence](#) December 12, 2024

Sharing the development and successes of one of the IGS's most long-running Chapters will form the basis of the 4th Romanian Conference on Geosynthetics next [Read More](#) »

[Giroud Lecturer Named As Jie Han](#) December 18, 2024

Dr. Jie Han has been named to deliver the next Giroud Lecture. Given at the opening of each International Conference on Geosynthetics (ICG), which occurs [Read More](#) »



News

<https://www.britishgeotech.org/news>

Deadline Extended Call for Entries – 56th Cooling Prize Competition 05.12.2024

Deadline extended to midnight on 13 December 2024.

The British Geotechnical Association (BGA) is pleased to invite Early Career Geotechnical Professionals to submit posters on any topic dealing with the engineering behaviour of the ground, whether it be a description of an industrial design or construction project, development of a new piece of equipment, or state-of-the-art research.

2024 Fleming Award Winner Announced 05.12.2024

The BGA is pleased to announce that the 2024 Fleming Award was won by Fehily Timoney and Company, Ramboll UK, John Sisk & Son Holdings Ltd, Menard UK and Transportation Infrastructure Ireland for their project presentation on the Dúnkettle Interchange Upgrade Scheme in Cork, Ireland.

The event was held in front of a live audience at the ICE in London on 3 December 2024. The event was also webcast live.

The BGA website has been updated 05.12.2024

The British Geotechnical Association (BGA) is pleased to announce that its website has been comprehensively updated.

The objective is to provide a better service to BGA members and the wider geotechnical community.

The BGA website includes our news and links to events, as well as archives of past winners of awards and prizes including the iconic Rankine Lecture.

Tickets for the 63rd Rankine Dinner are now available 09.12.2024

Tickets for the BGA 63rd Rankine Dinner in honour of the 2025 Rankine Lecturer, Professor Kenichi Soga, to be held at Imperial College London on Wednesday 19th March 2025, are now available.

The link to the on-line booking form can be found [here](#).

Bookings should be completed by the 17th of January 2025. Please note that the Dinner is often oversubscribed and a table/seat is not guaranteed until a payment is made.

The December 2024 issue of Ground Engineering is available on line 20.12.2024

The December 2024 issue of Ground Engineering is available on line. Online access to Ground Engineering (GE) is included in BGA subscriptions

The December issue of *Ground Engineering* includes site reports on ground improvement works on the Transpennine Route Upgrade West scheme, grouting solutions at Hampton Reservoir in southwest London, and shaft construction challenges at the HS2 Green Park Way site.

The issue also includes the publication of the paper that won the 2024 Cooling Prize.

In addition, it has interviews with the chair of the Federation of Piling Specialists, Malcolm O'Sullivan, and the chair of the Steel Piling Group, David Coyle.

The December issue also has an Engineering Insight Q&A with the 2024 winner of the GE Equality, Diversity and Inclusion Champion award, Hollie Taylor, as well as the latest news and opinion.

Use [this link](#) to view the latest digital issue.

Blackwell Earthmoving are the Platinum Sponsor for the Earthworks 2025 Conference 20.12.2024

The British Geotechnical Association is pleased to welcome Blackwell Earthmoving as our Platinum Sponsor for the Earthworks 2025 Conference, which is taking place at the University of Birmingham on 16th and 17th September 2025. Sponsorships are very important to the success of BGA events, and we thank Blackwell for their support.

If you want to find out how to get involved, visit the conference website www.earthworks2025.com

ΠΡΟΣΕΧΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ

Για τις παλαιότερες καταχωρήσεις περισσότερες πληροφορίες μπορούν να αναζητηθούν στα προηγούμενα τεύχη του «περιοδικού» και στις παρατιθέμενες ιστοσελίδες.

Earthquake & Geotechnical Engineering, 1^ο Ρουμανο-Ελληνικό Σεμινάριο επί Σεισμικής και Γεωτεχνικής Μηχανικής, 27 Μαρτίου 2025, Βουκουρέστι, Ρουμανία

ROCSCIENCE INTERNATIONAL CONFERENCE 2025, April 6-8, 2025, Sydney, Australia, www.rocscience.com/events/rocscience-international-conference-2025

4th International Conference on TRANSDISCIPLINARY MULTI-SPECTRAL MODELLING AND COOPERATION FOR THE PRESERVATION OF CULTURAL HERITAGE Addressing World Challenges, 7-9 April 2025, Athens, Greece, <https://www.tmm-ch.com>



International Conference on Advances in Structural And Geotechnical Engineering (ICASGE'25)

14 - 17 April 2025, Hurghada, Egypt
<https://icasge.conferences.ekb.eg>

The Structural Engineering Department of Tanta University is thrilled to announce the 10th anniversary at the fifth edition of the International Conference on Advances in Structural and Geotechnical Engineering (ICASGE'25), taking place in the stunning city of Hurghada, Egypt, from April 14 to 17, 2025. Thus celebrating a decade of success.

Since our first conference in 2015, ICASGE has established itself as a leading platform for bringing together experts and enthusiasts from around the globe to share ideas and experiences in Structural, Geotechnical, and Construction Engineering. This event is more than just a conference; it is a dynamic community that continuously evolves through collaboration and innovation.

Under the theme "Integration of AI-Driven Vision and Innovative Smart Techniques: Pioneering the Future of Structural and Geotechnical Engineering," we invite you to join us in exploring the future of engineering and the transformative

impact of modern technologies. Engage with thought leaders and visionaries in the field, and seize the opportunity to exchange knowledge and forge new partnerships.

Conference Topics

- Renewable Energy Structures and Foundations
- Computational Geomechanics
- Soil Behavior and Modeling
- Ground Improvement and Problematic Soils
- Design with Geosynthetics
- Geothermal Energy
- Tunnels and Underground Constructions
- Environmental Geotechnics
- Rock Mechanics
- AI in Structures, Geotechnical and Construction Engineering
- Soil-structure Interactions
- Structural Stability
- Steel and Composite Structures
- Cold-formed structures
- High-strength and other steels
- Dynamics and vibration
- Steel Design and codification
- Fatigue and fracture
- Innovative Structural Conservation, Repair and Strengthening
- Reinforced Concrete Design and Codes
- Sustainable and Green Construction Materials
- Durability and Life Prediction of Structures
- Structural Health Monitoring
- Fabrication and Construction
- Risk Analysis and Decision Making
- Building Information Modeling (BIM)
- Sustainability
- Neural Networks and Optimization Techniques
- Safety, Quality and Environmental Management
- Automation and Robotics in Construction
- Life-Cycle Assessment and Circular Economy

Contact Us E-mail address: icasge@unv.tanta.edu.eg



22 April 2025, London, United Kingdom
<https://piling.geplus.co.uk/GEPI2025/en/page/home>

The **GE Piling and Foundations 2025** conference brings together industry leaders for a day of knowledge sharing, discussion and networking, featuring inspiring keynotes, spotlight project updates, technical case studies and insightful panel debates.

Here are 5 reasons why you can't miss Piling and Foundations 2025:

- **Learn about the latest innovations in materials, methods and design**, and discover how they will change piling and foundations in the future
- **Delve into the piling developments on major cross-sector projects**, and learn how they are driving the industry forward
- **Explore the future projects pipeline and discuss how the industry can deliver the pipeline**, from materials and skills shortages to collaboration and innovation
- **Find out about the latest advances in offshore piling** and discover how they could influence the onshore sector
- **Join your peers for a day of learning and networking** at the only event in 2025 focused solely on the piling sector

With themes of technology, innovation and decarbonisation, the conference will delve into the biggest challenges facing the industry and explore the latest technical advances and industry developments that will shape the sector. Bringing together the whole piling and foundations sector to share best practice, network and discuss the key sector challenges, this is a vital event for the industry.

Key topics:

- Explore case studies from some of the most exciting and innovative piling projects
- Discover how new technology and data is transforming the foundations sector
- Examine how sustainability and decarbonisation is piling projects
- Discuss how new materials and design and approaches are being adopted

Network with professionals, contractors, and suppliers, fostering collaboration and knowledge exchange. Whether you're a seasoned expert or a newcomer, this conference offers a unique opportunity to enhance your understanding of the latest developments in piling and foundation engineering.

Elevate your skills, connect with industry influencers, and contribute to the advancement of foundation engineering excellence.

If you're interested in joining as a speaker this year, please contact Sophie.Carus@emap.com



ISRM Workshop on Soft Rocks (ISRM-WSR2025) 15-16 May 2025, Porto, Portugal <https://fe.up.pt/isrm-wsr2025>

Soft rock, with its intricate mechanical behaviour, poses significant challenges in rock engineering, particularly as pro-

jects in coal mining, water conservancy and transportation extend into deeper territories. The encounter with weak and fractured strata in complex geological settings, characterized by high in-situ stress, geothermal gradients and the presence of groundwater, necessitates innovative approaches to ensure safety and manage construction costs effectively. The comprehensive understanding of soft rock's physical properties and classification, and the development of novel design methods for engineering in such environments is crucial for the advancement of the field.

The Soft Rocks Commission of the International Society for Rock Mechanics and Rock Engineering (ISRM) is proud to announce the organization of the ISRM Workshop on Soft Rocks, to be held in Porto, Portugal, in May 2025. We look forward to receiving your groundbreaking research and a fruitful exchange of ideas at the ISRM Workshop on Soft Rocks in 2025.

Themes & Topics

- Concept and classification of soft rocks
- Physical and mechanical characterization of soft rocks
- Stability analysis, monitoring and control technology of soft-rock slopes
- Deformation mechanism and control technology of soft-rock tunnels
- Design measures of soft-rock engineering

Contacts & Information

Manuel Carvalho, ICS/University of Porto, Portugal
manuel@fe.up.pt

Danting Hu, Chinese Society for Rock Mechanics and Engineering, China
dantinghu@126.com



GEOTECHNICS REIMAGINED, May 21-23, 2025, Bruges, Belgium, <https://dfi-events.org/dfi-effc25>

World Tunnel Congress 2025 "Tunnelling into a sustainable future – methods and technologies", 9-15 May 2025, Stockholm, Sweden, www.wtc2025.se

ISFOG 2025 5th International Symposium on Frontiers in Offshore Geotechnics, June 9-13, 2025, Nantes, France, <https://isfog2025.univ-gustave-eiffel.fr>

GeoAsia - 8th Asian Conference on Geosynthetics, 10-13 June 2025, Brisbane, Australia, <https://geoasia8.org>

EGRWSE-2025 6th International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering, June 11-14, 2025, Vigo, Spain, <https://egrwse2025.webs.uvigo.es/>

EUROCK 2025 - ISRM European Rock Mechanics Symposium Expanding the underground space - future development of the subsurface - an ISRM Regional Symposium, 16-20 June 2025, Trondheim, Norway, <https://eurock2025.com>

3rd International Conference on Energy Geotechnics – Implementing the Energy Transition, 17-20 June 2025, Paris, France, Kamelia Atefi-Monfared, catefi@yorku.ca

5ICGE & 3ICESE 5th International Conference on Geotechnical Engineering-Iraq & 3rd International Conference on Engineering Science & Energy, 1-3 July 2025, 3 July 2025, Komar University, Sulymaniyah, Iraq, <https://icqe.tech>

6th International Conference GEE2025: Charting the path toward the future Geotechnical Engineering Education, July 2-4 2025, Nancy, France, <https://gee2025.sciencesconf.org/>

ISGSR2025 9th International Symposium for Geotechnical Safety and Risk, 24th - 27th August 2025, Oslo, Norway, www.isgsr2025.com



**6th International Conference on
GIS and Geoinformation Zoning for Disaster
Mitigation (GIZ)
August 28-30, Almaty, Kazakhstan
<https://giz2025.org>**

The Asian Technical Committee (ATC10) of ISSMGE, in collaboration with TC305 and the Kazakhstan Geotechnical Society, is pleased to announce the 6th International Conference on GIS and Geoinformation Zoning for Disaster Mitigation (GIZ), to be held in Almaty, Kazakhstan.

This event, which has been successfully hosted five times since its establishment, provides a platform for professionals, researchers, engineers, and public officials to share cutting-edge research and technologies related to geoinformatics, hazard zoning, geotechnics, earthquake engineering, and disaster prevention.

In the wake of the challenges posed by the COVID-19 pandemic, we are excited to return to an in-person format and are pleased to expand the scope of ATC10 to include emerging technologies such as Building Information Modeling (BIM), Digital Twin, and Machine Learning. These advancements promise to enhance our research and practices in disaster mitigation.

This conference will also be co-organized by the Asian Regional Technical Committee 19 (ATC19) (Preservation of Historic Sites) of ISSMGE. Following the success of the previous symposium held at the Nara National Institute of Cultural Properties in Japan in 2023, this event aims to further promote the preservation of historic sites by fostering cooperation, supporting interdisciplinary studies, and addressing the impact of natural disasters on cultural heritage from a geotechnical perspective.

We look forward to welcoming participants to Almaty for an inspiring and collaborative event that will contribute to innovation and progress in these crucial fields.

Conference Themes

Geoinformatics:

- Geo-information zoning for disaster mitigation
- Geo-database application to lifecycle management of infrastructure, education, new business developments, etc.

- Evaluation of the reliability of the data and geotechnical models
- Visualization of the data and geotechnical models
- Application of BIM and Digital twin to geoinformatics
- Application of machine learning to geoinformatics

Historic sites:

- Slope stability
- Retaining wall
- Foundation
- Preservation environment
- Seismic resistance
- Ancient materials
- Chemical/Biological damage
- Physical exploration/Monitoring

Geotechnical engineering, risk assessment and innovative technologies:

- Geoenvironmental engineering
- Geotechnical reliability, risk assessment and management
- Geosynthetics and Geoproducts
- Engineering geology and rock engineering
- Forensic engineering
- In-situ testing and monitoring
- Investigation of foundations of historical structures, buildings and monuments
- Numerical analysis of soil-structure interaction
- Press-in piling technology
- Trenchless technology in underground constructions
- Pipelines on problematical soil ground
- Frost geotechnics
- Megaprojects and Megastructures on difficulty soil grounds

CONTACT INFORMATION

Conference Secretary

Mrs. Almagul Mukasheva almagul_m75@mail.ru
Mrs. Bibigul Abdrakhmanova bibakqs@gmail.com
Dr. Assem Abisheva abisheva012@gmail.com



UNSAT2025 5th European Conference on Unsaturated Soils, 1 to 3 September 2025, Lisbon, Portugal, <https://eun-sat2025.tecnico.ulisboa.pt>

Symposium International pour le 70ème anniversaire du pressiomètre / International Symposium for the 70th Anniversary of the Pressuremeter, 2nd to 5th of September 2025, LUXEMBOURG, <https://isp8-pressio2025.com>

TKZ2025 XXI Technical Dam Control International Conference, 09-12 September 2025, Chorzów, Poland <https://tkz.is.pw.edu.pl/en/>

EUROGEO Technical Challenges and Environmental Imperatives for the 21st Century, 15-18 September 2025, Lille, France, <https://eurogeo8.org>

TRANSOILCOLD 2025 7th International Symposium on Transportation Soil Engineering in Cold Regions, September 17-20, 2025, Incheon, Korea, www.transoilcold2025.org

2025 AIGTAS IWLSC 3rd International Workshop on Landslides in Sensitive Clays, September 28th to October 2nd, 2025, Quebec, Canada www.iwls2025.ca

GEOTECH ASIA 2025 - GEOVADIS: The Future of Geotechnical Engineering, October 7th to 10th, 2025, Goa, India, <https://www.geotechasia.org>

We look forward to seeing you in October 2025!

ORGANIZING SECRETARIAT



AIM Italy – Florence Office
Viale G. Mazzini, 70
50132 Florence, Italy
Ph. +39 02 566011
fomlig2025@aimgroup.eu



Ethics and intelligences for a geotechnical Renaissance

October 15-17, 2025, Florence, Italy
<https://fomlig2025.com>

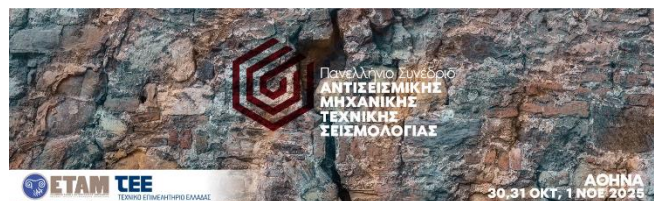
Unprecedented capabilities in data acquisition and processing, inspirational paradigms and knowledge emerging from scientific research, and a new, multi-faceted global awareness about the importance of networking and sustainability are changing the world at a very fast pace.

Within this exciting context, artificial intelligence and machine learning are increasingly employed in the pursuit of resilient, ethical management of human communities and of the natural environment. As in many other technical and non-technical disciplines, they demonstrate their suitability and potential in geotechnical engineering by enhancing analysis, data processing, and design through their capability of addressing complexity.

The Third Workshop on the Future of Machine Learning in Geotechnics will focus on how current and forthcoming synergies between human and artificial intelligences will foster geotechnical research, practice, and education, and how human conscience and ethics can best nurture this partnership through new paradigms, cultural perceptions, and regulations.

We are happy to welcome students, practitioners, and researchers from both within and outside the geotechnical discipline to Florence, a city celebrated worldwide as “the capital of the Renaissance” for its artistic and cultural heritage and its role of leadership in a historical period of profound reawakening. A city perfectly suited to host discussions regarding the next steps in geotechnical intelligence because what today is an incomparable artistic heritage is the long-standing result of a virtuous network of bold entrepreneurial and technical thinking, innovative engineering and artistic technologies, and forward-looking international relations.

Urban GeoEngineering 5th AsRTC6 “Urban GeoEngineering” Symposium, 23rd & 24th of October 2025, Taipei, Taiwan, www.asrtc6urbangeoengineering2025.com/index.html



**6^ο Πανελλήνιο Συνέδριο
Αντισεισμικής Μηχανικής και
Τεχνικής Σεισμολογίας**
30, 31 Οκτωβρίου, 1 Νοεμβρίου 2025, Αθήνα
<https://6psamts.eltam.org>

Το **Ελληνικό Τμήμα Αντισεισμικής Μηχανικής (ΕΤΑΜ)** και το **Τεχνικό Επιμελητήριο Ελλάδας (ΤΕΕ)** βρίσκονται στην ευχάριστη θέση να ανακοινώσουν τη συν-διοργάνωση του **6ου Πανελληνίου Συνεδρίου Αντισεισμικής Μηχανικής και Τεχνικής Σεισμολογίας (6ΨΣΑΜΤΣ)**. Το 6ΨΣΑΜΤΣ αποτελεί συνέχεια της σειράς των σχετικών επιστημονικών συνεδρίων και θα πραγματοποιηθεί στην **Αθήνα** στις **30, 31 Οκτωβρίου** και **1 Νοεμβρίου 2025**.

Στο πλαίσιο του συνεδρίου θα λάβουν χώρα **Προσκεκλημένες Ομιλίες** και **Ειδικές Συνεδρίες** με ομιλίες διακεκριμένων επιστημόνων από την Ελλάδα και το εξωτερικό, καθώς και πλειάδα άλλων παρουσιάσεων. Σκοπός του Συνεδρίου είναι να φέρει κοντά την επιστημονική και επαγγελματική κοινότητα των Ελλήνων μηχανικών και σεισμολόγων και να παρουσιάσει τις τελευταίες εξελίξεις στον τομέα της αντισεισμικής μηχανικής.

Το συνέδριο έχει τη θεσμική υποστήριξη των :

- Συλλόγου Πολιτικών Μηχανικών Ελλάδας (ΣΠΜΕ)
- Επιστημονικού Τεχνικού Επιμελητηρίου Κύπρου (ΕΤΕΚ)
- Συλλόγου Πολιτικών Μηχανικών Κύπρου (ΣΠΟΛΜΗΚ)

Αναλυτικές πληροφορίες για το συνέδριο:
<https://6psamts.eltam.org/>

Επικοινωνήστε μαζί μας 6psamts@eltam.org



17th International Conference on Geotechnical Engineering
8th International Symposium on Geohazards, December 4-5,
2025, Lahore, Pakistan, <https://17icqe-8isq.com>



PMGEC LEBANON 2025

**Pan Mediterranean
Geotechnical Engineering Conference**
25 - 28 March 2026, Phoenicia Beirut IHG, Lebanon
<https://pmgtec-leb.com>

The Lebanese Geotechnical Engineering Society (LGES) is pleased and honored to invite you to the Inaugural Pan Mediterranean Geotechnical Engineering Conference (PMGEC) to be held in Beirut, Lebanon between the 25th and the 28th of March 2026. Save the dates on your calendar!

This new series of conferences launched by the current president of ISSMGE, Dr. Marc Ballouz, has been an idea among geo-professionals from the Mediterranean countries for years and has now become reality. The pan-mediterranean geotechnical engineering conference would be hosted every 4 years by a Mediterranean country under the auspices of the ISSMGE.

The inaugural PMGEC in Lebanon will provide an exceptional opportunity to foster professional growth, knowledge exchange, and collaboration within the geo-engineering community around the Mediterranean as well as from all around the world. Expect top Keynote lecturers, advanced technical sessions, and exciting panel discussions that will showcase the rich history in geotechnical engineering research, design and practice across the Mediterranean. We cant wait to show you our country.

1st PMGEC Promotion by ISSMGE President Marc Ballouz:



<https://www.youtube.com/watch?v=d9GVCuPeXSU>

Overlooking the Mediterranean Sea, exuding majesty and grandeur, the conference venue at the historical Inter-Continental Phoenicia Beirut, stands proudly at the heart of Lebanon's capital city. Its only a few minutes from the city's Downtown business district, across from the famous Saint George beach resort with its pools where we will be having our gala dinner. The beach walk promenade by the Zaitouna bay and marina is right there, with dozens of exquisite restaurants along the bay and in downtown. where Mediterra-

nean and international cuisines awaits you , not to forget major shopping areas nearby with the ease of grabbing cheap taxis. In April, the weather is best for outdoor activities, like eco tourism , visit archaeological sites , and enjoy the Mediterranean sunshine. In addition, as a bonus, Beirut nightlife is the best in the world (according to CNN). The conference location is perfect for a memorable family trip and we are keen to give you an extremely technically striking but also incredibly enjoyable experience.



LANDSLIDES 2026

Landslide Geo-Education and Risk (LaGER)
27 April - 1 May 2026, Queenstown, New Zealand
<http://landsliderisk.nz>

Nau Mai, Haere Mai – Welcome!

The New Zealand Geotechnical Society is delighted to welcome you to the First International Joint Workshop of JTC1 and JTC3 on Landslide Risk Assessment, Communication and Geo-education. We will share the latest research and develop best practice guidelines in the stunning New Zealand city of Queenstown. Landslides are one of New Zealand's most significant natural hazards. Since 1760 there have been at least 1,500 deaths from landslides in New Zealand. More fatalities have occurred from landslides than from earthquakes, volcanic activity and tsunami combined over the last 160 years. Queenstown is particularly vulnerable, making it an ideal venue for a conference about landslides. More than 50% of the land around the town is mapped as known landslides, with the underlying quartzofeldspathic schist very susceptible to deep seated failures. The largest failure is the Queenstown Hill Landslide, with an estimated volume of 240M m³.

Our theme "Landslide Geo-Education and Risk" brings together the full lifecycle of landslide risk management. It encompasses the need to educate the next generation of landslide risk managers, the need to robustly understand landslide risk, and the need to communicate that risk to the public and decision-makers so that real change is implemented. We believe that bringing together JTC1 and JTC3 to work together on landslide risk assessment, education, communication and outreach is a great opportunity to effect real change.

The workshop will give you the opportunity to hear about and provide your expertise to inform important research and applied projects underway in New Zealand. These include:

- Sliding Lands – a five-year research programme to create national-scale landslide models that can forecast where rapid and dangerous landslides are likely to be triggered by earthquakes and rainfall events.
- Landslide Watch – a five-year research project that aims to move away from expensive local reactive (post-event) in-situ monitoring to pre-active (pre-event) space-based observation.
- Landslide Risk Management Guidelines – a two-year project to develop best-practice guidelines for undertaking landslide risk assessments.
- Geo-Education Development – aligning with the re-launch of the University of Canterbury Professional Master of Engineering Geology to develop education and outreach material.

Concept programme

Training

Learn from industry experts in the field of landslide risk management. Topics may include:

- Geoscience and risk communication
- Media training for geoprosessionals
- C25 Engineering Geological Models for landslides

Susceptibility, Data & Risk

Presentations on landslide inventory, susceptibility and risk assessment best practice. Workshops on landslide data management.

Risk to policy

Presentations on managing and mitigating landslide risk. Workshops on landslide risk assessment guidelines and practice.

outreach and Education

Presentations and discussions on communication of risk to stakeholders, education of public and policy-makers, and professional development for geoprosessionals and academics.

Field Trips and Exercises

Contact Info

Address: NZ Geotechnical Society Inc./o Engineering New Zealand
PO Box 12-241 Wellington 6013
Email: secretary@nzgs.org

Conference Organiser

Conferences & Events Ltd
PO Box 24078, Manners Street Wellington 6011
Tel: +64 4 384 1511



<https://wtc2026.ca>

On behalf of the Canadian Tunnelling Association and the 2026 World Tunnel Congress Organizing Committee, I'm pleased to extend my warmest greetings and invite you to take part in this not-to-be-missed event, which will take place from May 15 to 21, 2026, in Montreal, Quebec, Canada.

Montreal is an island at the confluence of the St. Lawrence and Ottawa rivers. Steeped in history yet at the same time a dynamic technological crossroads, Montreal holds THE top spot as a host city for international congresses in America, for many reasons: its legendary safety, its cultural dynamism (more than 30 languages are spoken here), its world-renowned gastronomy, not to mention underground Montreal and its 33 km-long pedestrian network.

The event will be held at the Palais des congrès de Montréal, one of the world's most renowned convention and exhibition centers, thanks to its event technologies, ultramodern spaces and exceptional organization services. The site features a vast exhibition area showcasing new technologies, original products and services related to underground construction. The exhibition, technical program and state-of-the-art conference setting will encourage interaction and the exchange of ideas.

The conference theme, "Connecting communities through underground infrastructure", addresses the vital role the tunnelling industry plays in connecting our communities through underground infrastructure. This enables the industry to build underground networks of transportation, water and sanitation, utilities and energy that cross, connect and unite cities, regions and continents.

WTC 2026 aims to bring together our international community of tunneling practitioners to share their experience and knowledge to make our projects safer, more economical, more resilient and more sustainable. It will not only generate considerable benefits for the tunnelling industry in Montreal, the province of Quebec and Canada as a whole, but will also promote Canadian expertise.

The scientific program, technical sessions and social activities will enable delegates to participate in exchanges, acquire new knowledge and establish new contacts with professionals from all over the world.



21st International Conference on Soil Mechanics and Geotechnical Engineering Geotechnical Challenges in a Changing Environment, 14 – 19 June 2026, Vienna, Austria, www.icsmge2026.org/en



ISFMG 2026 12th International Symposium on Field Monitoring in Geomechanics, 06 -10 August 2026, Indian Institute of Technology Indore, India, <https://sites.google.com/view/isfmq2026/home>



International Conference on Advances and Innovations in Soft Soil Engineering 2026 24-26 August 2026, Delft, Netherlands

As global land development expands into coastal regions, offshore reclamation areas, and wetlands, the geotechnical challenges posed by soft soils are becoming more critical. These soils, including highly sensitive clays, marine silty clays, organic soils, peats, loose sands, and dredged soils, are known for their high compressibility, water content, and complex mechanical properties, making construction projects

in such areas problematic. To address these challenges, soft soil engineering is evolving with innovative technologies and approaches.

This conference, organised under the auspices of the ISSMGE Technical Committee 214 on "Foundation Engineering for Difficult Soft Soil Conditions", will showcase the latest developments in testing, modelling, monitoring and construction and improvement techniques for soft soils. It will provide a platform for researchers, engineers, and industry professionals to exchange expertise and discuss how these innovations can be applied to address modern construction challenges in soft soil environments.

Contact Information

Contact person: Stefano Muraro, s.muraro@tudelft.nl



X Latin American Congress on Rock Mechanics 26 - 28 Aug, 2026, Brasilia, Brazil

Contact Person: Marcos Massao Futai, Brazilian Committee of Rock Mechanics



13th International Conference on Geosynthetics (13 ICG)

13-17 September 2026, Montréal, Canada
www.13icg-montreal.org

The 13th International Conference on Geosynthetics (ICG) 2026, hosted by the North American Chapter of the International Geosynthetics Society ([IGS-NA](http://www.igs-na.org)), is themed "Legacy, Evolution & Revolution in Geosynthetics." The theme reflects the many transitions occurring in the field, in our shared responsibility to climate and society, and in how we respond to the challenges and opportunities presented to us by these transitions.



Eurock 2026 Risk Management in Rock Engineering - an ISRM Regional Symposium

14-19 September 2026, Skopje, Republic North Macedonia

Contact Person Name

Prof. Milorad Jovanovski

Email jovanovski@gf.ukim.edu.mk



International Symposium Preservation of Monuments & Historic Sites, 16 - 18 September 2026, Athens, Greece
<https://tc301-athens.com>



6th International Conference on Information Technology in Geo-Engineering JTC2 Conference 13-16 October 2026, Oslo, Norway

The 6th International Conference on Information Technology in Geo-Engineering (6th ICITG) will be an arena to discuss all topics related to the ongoing digital transformation in Geo-Engineering. Case studies of IT in Geo-Engineering, integration of digital systems (Scan2BIM, BIM2FEM, etc.), benchmark datasets, information modelling, monitoring technology and artificial intelligence are some of the key topics of the 6th ICITG. It is organized under the auspices of the Joint Technical Committee 2 (JTC2) on "Representation of Geo-Engineering Data" of the Federation of International Geo-Engineering Societies (FedIGS).

Contact: Joint Technical Committee 2 (JTC2), Norwegian Geotechnical Institute, Graz University of Technology, georg.erharter@ngi.no



ARMS14 14th Asian Rock Mechanics Symposium - ARMS14, an ISRM Regional Symposium 22-26 November 2026, Fukuoka, Japan

Contact Person Name

Yasuhiro Mitani mitani@doc.kyushu-u.ac.jp

Telephone +81 92 8023399

Address 744, Motooka, Nishi-ku Fukuoka Japan



16th International Congress on Rock Mechanics Rock Mechanics and Rock Engineering

Scope

The scope of the Congress will cover both conventional and emerging topics in broadly-defined rock mechanics and rock engineering. The themes of the Congress include but not be limited to the following areas:

- Fundamental rock mechanics
- Laboratory and field testing and physical modeling of rock mass
- Analytical and numerical methods in rock mechanics and rock engineering
- Underground excavations in civil and mining engineering
- Slope stability for rock engineering
- Rock mechanics for environmental impact
- Sustainable development for energy and mineral resources
- Petroleum geomechanics
- Rock dynamics
- Coupled processes in rock mass
- Underground storage for petroleum, gas, CO₂ and radioactive waste
- Rock mechanics for renewable energy resources
- Geomechanics for sustainable development of energy and mineral resources
- New frontiers & innovations of rock mechanics
- Artificial Intelligence, IoT, Big data and Mobile (AICBM) applications in rock mechanics
- Smart Mining and Digital Oil field for rock mechanics
- Rock Engineering as an appropriate technology
- Geomechanics and Rock Engineering for Official Development Assistance (ODA) program
- Rock mechanics as an interdisciplinary science and engineering
- Future of rock mechanics and geomechanics

Our motto for the congress is "Rock Mechanics and Rock Engineering Across the Borders". This logo embodies the interdisciplinary nature of rock mechanics and challenges of ISRM across all countries and generations.

XIXth European Conference on Soil Mechanics and Geotechnical Engineering "Connecting Continents Through Geotechnical Innovations"

04-08 September 2028, Istanbul, Turkey

Conference Topics

- 01 Modelling and Experimental Assessment of Geomaterials
- 02 Geohazards, Earthquakes and Risk Mitigation
- 03 Development of Resilient and Sustainable Geosystems
- 04 Geotechnical Construction and Soil Improvement
- 05 Geotechnical Engineering of Multiscale Observations, Sensors and Monitoring
- 06 Energy Geotechnologies
- 07 Technological Innovation
- 08 Geo Education, Standards And Codes

Contact

R. Duzceer
(President of Turkish National Society for ISSMGE)

ΕΝΔΙΑΦΕΡΟΝΤΑ ΓΕΩΤΕΧΝΙΚΑ ΝΕΑ

A new coal waste landslide at Cwmtillery in South Wales

Over the weekend, Storm Bert triggered a failure that led to the evacuation of some houses in an old coal mining area.

In Wales, Storm Bert brought extremely heavy rainfall over the weekend, triggering extensive flooding and a number of landslides. The most serious failure appears to have occurred at Cwmtillery in Blaenau Gwent, where a slip affected an abandoned coal waste tip.

I have posted before about the ongoing concern about these waste piles in South Wales, and the lack of willingness from the UK national government to take responsibility for their remediation, which has left the devolved government of Wales with an unmanageable risk. This latest failure will increase concerns.

The location of the failure is, I believe [54.7447, -3.1297]. The site has been identified as Category D coal tip – this is the highest category in terms of risk. The Athena Picture Agency has an excellent Tweet of images of the site:-



Athena Picture Agency
@athenapics · Follow



#landslip caused homes #evacuated #coaltip #collapse #Cwmtillery #Wales athena-pictures.com #abetillery #colliery #mine #coal #stormbert #bret #southwalesvalleys #blaenau-gwent #evacuation #homes #flooding #floods #weather #extremeweather



10:09 PM · Nov 25, 2024



This includes in picture 2 a good overview of the failure.

Now, it is important to emphasise that this is not an Aberfan type of landslide – the scale is vastly different for a start – but I do not want to trivialise the impact on the local community.

To understand the landslide, it is useful to take a look at this Google Earth image of the location. I have chosen an image from 2013, as the vegetation was lower at that point:-

The landslide appears to have originated on the downslope side of the track towards the top of the Google Earth image, near to the 180 degree bend. The waste has then flowed directly downslope, with some entrainment of debris en route.



Google Earth image from 2013 showing the site of the coal tip landslide at Cwmtillery.

Work will now be underway to understand the failure, but it is likely to be a combination of a steeper slope associated with the track, and drainage issues (perhaps water from the intense rainfall flowed along the track and was focused into the slope). It will be interesting to see whether any of the drains (if present) became blocked or were simply overwhelmed. Note the broken blue pipe at the top of the landslide scar in the Athena image.

This event will serve to raise the profile once again of the hazard associated with these legacy coal tips (and this is not a problem that is unique to the UK). It will be interesting to see whether the Labour national government is willing to take responsibility for the remediation. Until that occurs, and work is undertaken across all of the Category D tips, we are likely to see more of these events in South Wales, which are an uncomfortable reminder of the tragedy of 1966.

(Dave Petley / The Landslide Blog, 25 November 2024, <https://eos.org/thelandslideblog/cwmtillery-1>)



The crisis of sinking cities

Dr. W. M. Wishwajith W. Kandegama and Dr. S. P. H Spencer Vitharana



Greater civilisations have fallen because they failed to prevent land degradation and land use changes. “Land” is a broad term referring to solid ground, encompassing everything from mountains to valleys, with a composition that includes soil, rock, sand, and other terrains. Soil, in particular, is essential for sustaining all living beings—sustainability.

Soil fertility is both a biophysical and public property. It is also a social property because all of humankind depends on

it for food production. A Harvard archaeologist, through research using remote sensing data and excavation findings, reveals exquisite signs of long-lost societies and shows that past civilisations made no attempts to adapt to natural landscapes, continuously insisting on developing urban lands for centuries until their land became uninhabitable, leading to the collapse of entire civilisations. Ancient pessimistic societies had a very thin margin for activism against their rulers' will. This inflexibility may be the main reason for the collapse of most ancient civilisations worldwide. The United Nations has stressed that societies around the world are still ignoring land degradation, refraining from action against land development, while governments continue urban land expansion under the banner of sustainable cities.

This suggests that current societal beliefs are misguided and that more activism is needed to reverse the damage. Previously, it was widely accepted that the Earth was flat—a dominant yet erroneous worldview 2,000 years ago. Similarly, we are mistaken again as we ignore land degradation and fail to conserve global land resources.

Research findings

Archaeological research shows that civilisations rise and fall depending on how societies manage their land amidst population growth and urbanisation trends. Currently, around 35.9 billion tons of fertile soil are lost annually due to human activities like land use changes and soil erosion. If governments do not respond swiftly, the modern world will suffer a similar fate. Now some small steps to prosecution of environmental harm have already been made at the International Criminal Courts (ICC), Hague, Netherlands, which has adopted the Rome Statute in 1998.

A silent hazard

Geoscientists at Virginia University revealed that major cities on the Atlantic coast are sinking by 1 to 5 mm per year. New York City, for instance, is sinking at an average of 1 to 2 mm annually. The city's 1,084,954 buildings weigh about 1.68 trillion pounds—almost double the weight of all humanity combined. The Netherlands sinks at a rate of around 7 mm a year despite having an incredibly sophisticated system to keep the country afloat, now paying the price for unprecedented land use changes. This fate may be possible in Colombo if land use changes continue with numerous skyscrapers along the coastline.

Researchers believe that, in the next 25 years, there could be significant repercussions, with skyscrapers in urban areas eventually collapsing if land use changes persist. Against this backdrop, this research aims to explore the relationship between four variables: land use change, environmental activism, international treaties, and the environmental rule of law, while examining whether environmental activism can help mitigate land depletion.

The research reveals that environmental litigation has significantly increased over the last decade due to a rise in environmental activism along with international treaties aimed at curbing land degradation. Despite these developments, environmental legal frameworks remain fragmented, with insufficient coordination between national governments, indicating that the international community requires global, progressive environmental activism to address land degradation leading to ecocide law—unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts. By adding ecocide law as a fifth crime to the Rome Statute of the International Criminal Court, the perpetrators of environmental destruction would suddenly be liable to arrest, prosecution and imprisonment that can be justifiable.

Lastly, global environmental law must be jointly studied with human-land activity with ecology, society and law concurrently. Country policies should occupy a central place in the current debate over 'law and society with ecology'. Law and society with environmental law studies provide an important contribution to mitigating 21st-century emerging issues that provide green ideas for scholars in science, technology, engineering, social, economic, policy, and environmental study areas.

In our previous publication, this researcher speculated a similar argument for social change through business and society dimensions. This research will be published in a peer-reviewed Scopus-indexed journal. The authors continue the dossier on 'business and society' and 'society and ecology' with environmental law research through the lens of a holistic health, safety and environmental management paradigm.

(Dr. W. M. Wishwajith is an Agricultural and Food Scientist and Dr. S. P. H Spencer Vitharana works as an Environmental and Applied Scientist.)

(December 8, 2024, <https://www.sundayobserver.lk/2024/12/08/spectrum/39387/the-crisis-of-sinking-cities>)



How Venice was Built

Μια πολύ ενδιαφέρουσα παρουσίαση για το πώς κτίσθηκε η Βαεντία στον ακόλουθο σύνδεσμο:

<https://www.facebook.com/reel/1078894737157363?mibextid=rS40aB7S9Ucbxw6v>



Hard Rock Rectangular Pipe Jacking Machine Breaks Through



The world's first hard rock rectangular pipe jacking machine broke through on a road project in Chongqing, China.

CREC 1112, developed and manufactured by [China Railway Engineering Equipment Group Co., Ltd.](https://www.china-railway-engineering-equipment-group.com/) (CREG), broke through on the pipe jacking section of N-Standard-Partition

Street Interchange C-Traffic-Node A-Ramp project in Chongqing Liangjiang New Area.

The project links Lushan Avenue near the North Square of Chongqing North Railway Station and the Chongqing Inner Ring Expressway.

CREG said it is the first time a large cross-section rectangular pipe jacking machine completed full-face excavation, solving the problem of blind area excavation, especially in hard rock strata, by a non-circular TBM.

Tunnels & Tunnelling Weekly, 30.12.2024

ΕΝΔΙΑΦΕΡΟΝΤΑ - ΣΕΙΣΜΟΙ & ΑΝΤΙΣΕΙΣΜΙΚΗ ΜΗΧΑΝΙΚΗ

Slow-slip earthquake in progress near Hawke's Bay, New Zealand

A slow-slip earthquake (SSE) event has been occurring near New Zealand's Hawke's Bay, along the Hikurangi Subduction Zone since early December.

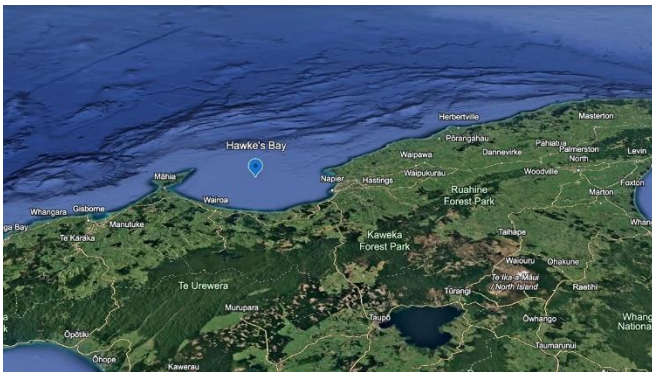


Image credit: Google, The Watchers

A slow-slip earthquake event is taking place in the Hikurangi Subduction Zone, a tectonic boundary between the Australian and Pacific plates. This zone runs along the east coast of New Zealand's North Island and dips beneath the landmass, forming a complex and active geological system.

Global Navigation Satellite System (GNSS) stations near the Mahia Peninsula, located north of Hawke's Bay, recorded land displacements of approximately 4 cm (1.6 inches) eastward and 1 cm (0.4 inches) southward, within the last 3 weeks of December.

Stations between Wairoa and Tolaga Bay exhibited similar movements with some sites moving up to 5 to 8 cm (2 to 3.1 inches). It represents up to 2 years' worth of tectonic plate motion occurring in just 3 weeks.

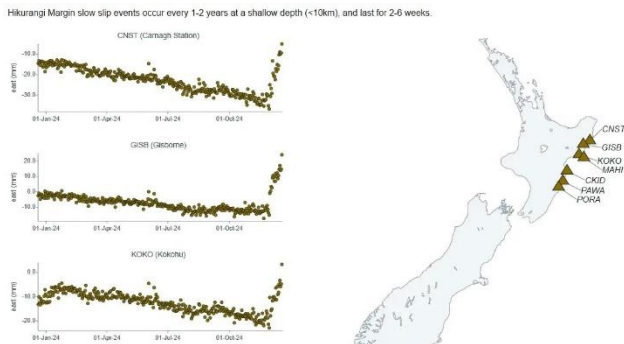
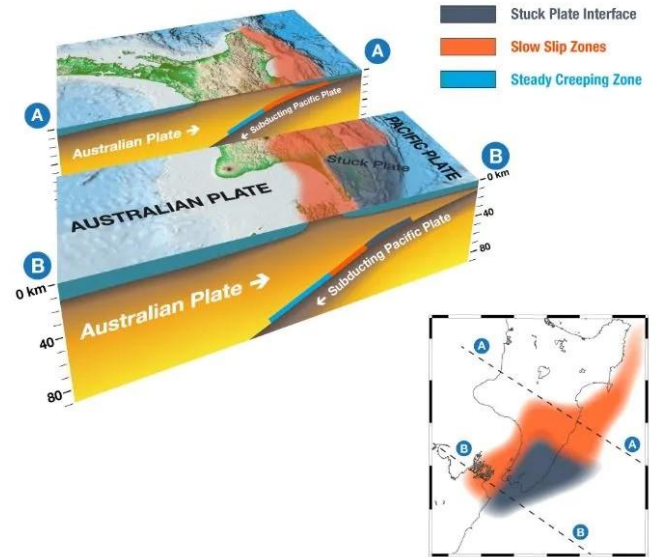


Image credit: GeoNet

The last recorded slow-slip earthquake in the area occurred in June 2023, showing the recurring nature of these phenomena in the Northern Hawke's Bay and Mahia regions.



Cross-section of the slow-slip zones at the boundary between the Australian and Pacific Plates. Image credit: GNS

The ongoing SSE is a focus for international research. Since 2014, over 50 offshore instruments, including ocean-bottom seismometers and seafloor pressure sensors, have been deployed to study the subduction zone. The tools enable precise monitoring of tectonic movements and associated phenomena.

These sensors, part of an international collaboration involving researchers from New Zealand, Germany, Japan, and the U.S., aim to map the spatial extent of SSEs, detect associated seismicity, and refine knowledge of subduction processes.

The JOIDES Resolution drilling vessel, in 2023, installed 2 observatories up to 500 m (1 640 feet) beneath the seafloor, near the current SSE location. The observatories are designed to capture multi-year data cycles of slow-slip events.

A recent U.S.-funded project also installed seafloor flowmeters to measure sub-seafloor water movement related to SSEs. The instruments will be retrieved and analyzed for detailed insights into subduction zone processes.

In early 2024, an underwater remotely operated vehicle collected data from the observatories. This dataset will aid scientists in understanding the mechanics of SSEs and their relationship with regular earthquakes.

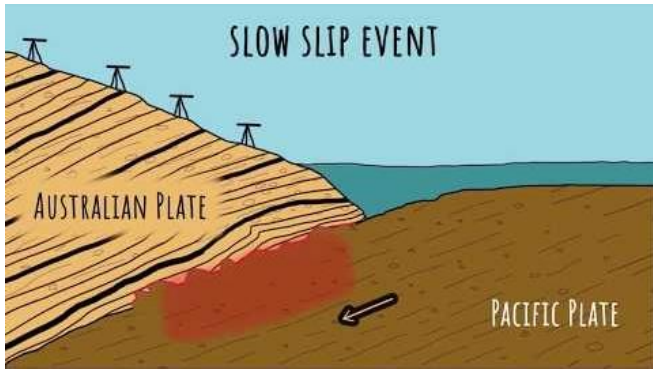
The Hikurangi Subduction Zone extends along New Zealand's east coast. The fault is known for frequent slow-slip events which is distinct from regular earthquakes.

The Subduction Zone is the largest fault in New Zealand and experiences Pacific Plate movement at rates of 2 to 6 cm (0.8 to 2.4 inches) per year. SSEs were first detected here in 2002 after GeoNet deployed permanent GNSS stations along the coast.

SSEs involve gradual energy release over weeks or months without the ground shaking associated with conventional seismic activity.

SSEs relieve stress in some areas of a subduction zone but may increase stress in adjacent regions. The interaction can trigger smaller, shallow earthquakes. Multiple earthquakes between magnitudes 2 and 4 have already been recorded near the Mahia Peninsula, correlated with the current SSE.

SSEs are not unique to New Zealand but are prominent in its tectonic landscape.



<https://www.youtube.com/watch?v=xgk2zBvdOgw&t=1s>

They play the main role in accommodating tectonic plate motion and redistributing stress even though they occur too slowly to be felt.

References:

¹ Hawke's Bay slow slip wakes up – [GNS](#) – December 20, 2024

² Slow slip earthquake occurring right now off the East Coast – [East Coast Lab](#) – Accessed on December 20, 2024

(Rishika Yadav / THE WATCHERS, Friday, December 20, 2024, <https://watchers.news/2024/12/20/slow-slip-earthquake-in-progress-near-hawkes-bay-new-zealand>)

ΕΝΔΙΑΦΕΡΟΝΤΑ - ΓΕΩΛΟΓΙΑ

Earth from space: Wandering sand dunes circle gigantic 'eye' sculpted by ancient city-killer meteor in the Sahara

This 2013 astronaut photo shows a giant eye-shaped impact crater in the Sahara Desert that is slowly being circled by migrating sand dunes, helping researchers track how far these dunes can move over time.



The Aorounga structure is a roughly 8-mile-wide impact crater left behind by a "city-killer" asteroid that slammed into Earth (Image credit: NASA/ISS program)

This striking astronaut photo shows off an "eye-catching" impact crater in the Sahara Desert. The oculus-like structure is surrounded by migrating sand dunes that are capable of traveling more than 100 feet (30 meters) every year.

QUICK FACTS

Where is it? Sahara Desert, Chad [[19.09146866, 19.23480321](#)]

What's in the photo? The eye-shaped Aorounga impact structure surrounded by moving sand dunes

Who took the photo? An unnamed astronaut onboard the ISS

When was it taken? Jan. 6, 2013

The [Aorounga structure](#) is a 7.8-mile-wide (12.6 kilometers) impact crater located in the southeast Sahara in northern Chad. The crater is made up of two rings that give the structure its eye-like appearance: An inner ring with a central hill, or uplift structure, that looks like a pupil; and an outer ring that looks like an eyelid. The rings rise around 330 feet (100 m) above the surrounding ground but have been heavily eroded over time — similar to other ancient impact craters — and were likely even taller and wider originally.

Experts believe that the structure formed around 345 million years ago and was likely created by a meteor around 2,000 feet (600 m) across, according to estimates from the Lunar and Planetary Institute. An impactor of this size, known as a "city-killer" asteroid, would have caused widespread damage across the north of Africa and may have even triggered climatic effects on a global scale.

The structure also has several dark lines running across both of its rings, which are sections of massive ridges, known as yardangs, according to the U.S. Geological Survey. These ridges, which can reach up to 100 feet (30 m) above ground

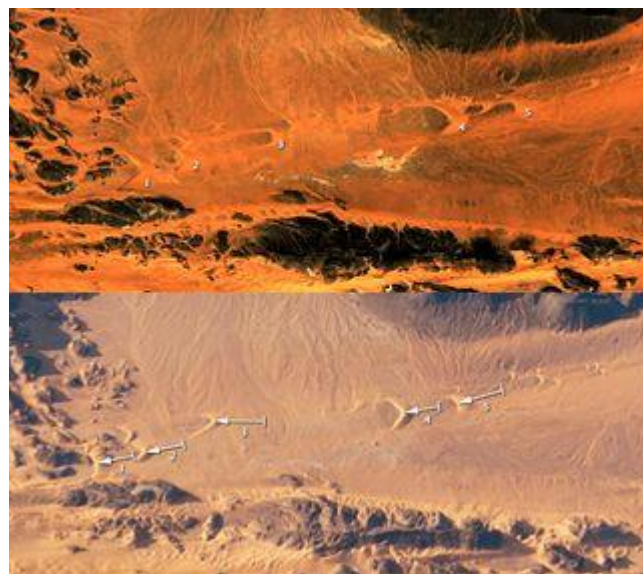
level, stretch across the surrounding areas for dozens of miles, as you can see in the 2016 astronaut images below.



The Aorounga structure is surrounded by dark ridges, known as yardangs, that cover this part of the Sahara. (Image credit: ESA/NASA)

A group of five barchan, or "horned," sand dunes can be seen in a zoomed-in version of the 2013 photo (see below). Over time, these arrowhead-shaped piles of sand are pushed across the desert by the wind and move in the opposite direction that their "horns" are pointed in, according to NASA's Earth Observatory.

By comparing their location in this image with satellite images of the same area in late 2003, researchers were able to work out exactly how far they had moved in just over nine years. From left to right, the five dunes — labeled 1, 2, 3, 4 and 5 — moved by 1,037 feet (316 m), 902 feet (275 m), 1,329 feet (405 m), 1,043 feet (318 m), and 1,250 feet (381 m) respectively.



The 2013 astronaut photo (bottom) helped researchers track how quickly the barchan dunes move by comparing their positions relative to a satellite image from 2003 (top). (Image credit: NASA/ISS program/Google Earth)

The biggest migrators, 3 and 5, are also the smallest dunes, which is consistent with what we know about how these dunes move, according to the Earth Observatory. Dunes smaller than these can be ripped apart within a decade.

Barchan dunes have long been known to migrate across the Sahara. However, scientists are only just beginning to work out exactly how far they can travel by tracking their movements with satellite images. Researchers hope these advancements could be used to forecast the sand's movements,

which could help mitigate problems caused by the dunes obstructing roads and smothering agricultural land, according to the Earth Observatory.

Radar images of the Aorounga structure taken from space in the late 1990s have also revealed that the eye-shaped rings could be part of a "crater chain." At least two other smaller craters were identified on either side of the structure, suggesting that smaller parts of the Aorounga meteor broke off from the falling asteroid and impacted the surrounding areas, according to [The Planetary Society](#).

(Harry Baker / LIVESCIENCE, November 26, 2024, <https://www.livescience.com/planet-earth/geology/earth-from-space-wandering-sand-dunes-circle-gigantic-eye-sculpted-by-ancient-city-killer-meteor-in-the-sahara>)

ΕΝΔΙΑΦΕΡΟΝΤΑ - ΛΟΙΠΑ

Project will utilise muons to assess aging infrastructure

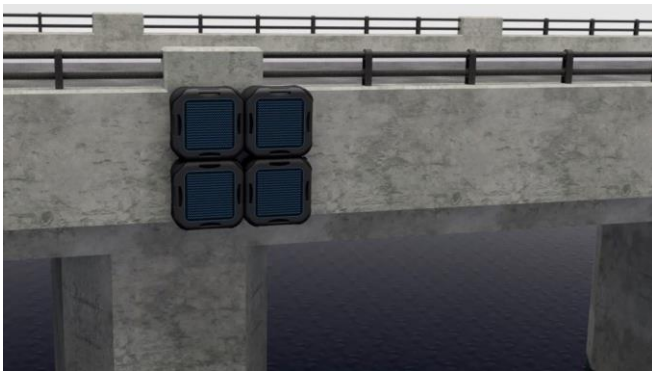
A non-destructive method of assessing the structural integrity of transport infrastructure using muons is being further developed in an STFC-funded project.



There are over 74,000 road and rail bridges across the UK -
AdobeStock

Glasgow University's Dr David Mahon has received £459,000 from UKRI's Science and Technology Facilities Council (STFC) to support the project, which aims to reduce the cost and environmental impact of repairs to road and rail bridges by enabling earlier detection of structural problems.

One way to do this is to track the movement of muons through a structure. Muons are particles created when cosmic rays collide with the nuclei of the gases found in the planet's atmosphere.



The detectors will be tested at a series of bridges across the city of Glasgow - *Glasgow University*

When muons strike objects on earth, they are deflected very slightly from their course. The amount of deflection depends on the chemical composition of the object they hit, with heavier elements causing greater deflection.

Measuring the deflection patterns over time, paired with computer analysis, allows researchers to build up detailed 3D images of structures which are impossible to produce using other non-destructive techniques like X-rays.

Lynkeos Technology Ltd, a spinout from Glasgow University, is already using muography techniques developed by Dr Mahon and colleagues to help the nuclear industry map the lo-

cations of pieces of radioactive waste stored in concrete-filled containers at some of the UK's nuclear power plants.

Over the next two years, Dr Mahon will work on reducing the size and improving the scanning speed of the muon detector technology to make it more suitable to be taken out of the lab and stationed in real-world conditions to take cosmic ray measurements. In partnership with Transport Scotland, the detectors will be tested at a series of bridges across the city of Glasgow.

In a statement, Dr Mahon, from Glasgow University's School of Physics & Astronomy, said: "There are more than 74,000 road and rail bridges across the UK, most of which are made from reinforced concrete, and many of which were built between 50 and 60 years ago. That means they're now getting close to the end of their intended lifespan, so it's important that they are properly monitored to ensure that they can be repaired when necessary.

"Current inspection methods often require exposing steel substructure, which can lead to rust and further weakening when exposed to rain.

"Muography is a technique that's already proven its worth in the nuclear industry, and it seems ideally placed to enable non-destructive testing in transport infrastructure too. This grant from the STFC will enable us to build on our previous achievements and build new, more portable test kits that can identify fatigue or defects at a much earlier stage than is currently possible. Being aware of problems earlier, before they cause significant damage or disruption, could help bring the overall cost of repairs down."

In addition to making the muon-detector technology more portable and power-efficient, the project will also find new ways to harness the power of machine learning to speed up the process of taking cosmic ray measurements.

Once the project's initial research phase is complete, Lynkeos Technology Ltd will work to bring the updated technology to market.

(THE ENGINEER, 09 Dec 2024, <https://www.theengineer.co.uk/content/news/project-will-utilise-muons-to-assess-aging-infrastructure>)

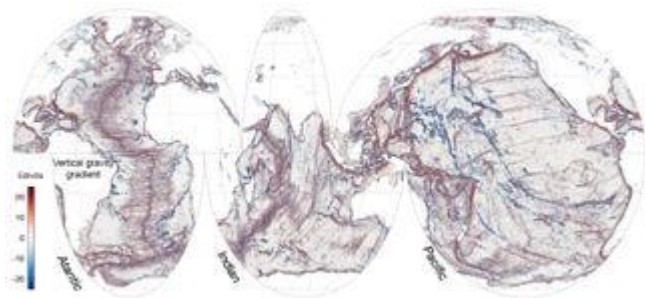


Satellites reveal stunningly detailed maps of Earth's seafloors

A newly-deployed satellite has created the most-detailed map yet of the ocean floor, finding hundreds of hills and underwater volcanoes that were previously missed.

The first year of measurements from NASA's Surface Water and Ocean Topography (SWOT) satellite mission, launched in December 2022 and developed by NASA and France's Centre National D'Etudes Spatiales, enabled researchers to study the boundaries between continents and identify underwater hills and volcanoes that are too small to be detected by earlier satellites.

"Finding these features will really push scientific developments forward, including tectonic theories," study co-author Yao Yu, a physical geographer at Scripps Institution of Oceanography, told Live Science. The findings could provide new information about ocean currents, nutrient transport in seawater and the geologic history of Earth's oceans.



In its first year of operation, the SWOT satellite captured more details of the sea floor than in 30 years of data collected by older satellites. (Image credit: NASA/SWOT)

A new satellite has mapped Earth's ocean floors in unprecedented detail, a new study reveals. .

With a 5-mile (8 kilometers) resolution and 21-day path covering most of the planet, just one year of data from SWOT gives a clearer picture of the ocean floor than 30 years of data collectively gathered by ships and older satellites, researchers said Dec. 12 in the journal *Science*.

To spot underwater features, SWOT measures the height of the ocean surface. Despite appearances, that surface is not flat, Yu said. The gravitational pull of underwater structures like hills and volcanoes causes water to pile atop those structures in spread-out lumps. Changes in the sea surface height therefore point to what lies deep beneath the surface.

The team focused on three types of underwater features: abyssal hills, small seamounts and continental margins. Abyssal hills — parallel ridges that are just hundreds of feet tall — are formed by the movements of tectonic plates. Using SWOT data, the team mapped individual hills and spotted a few places where the direction of the ridges changed, suggesting that at some point in Earth's history, the tectonic plate that formed them changed the direction of its movement.

"I'm very surprised by the abyssal hills," Yu said, because the researchers weren't expecting to see so many hills in so little time.

Yu and her colleagues also studied seamounts, or underwater volcanoes, which affect ocean currents and often act as hot-spots for biodiversity. Older satellites have mapped large seamounts, but the team spotted thousands of smaller, previously unknown seamounts less than 3,300 feet (1,000 meters) tall in the SWOT data.

The data helped the team further refine maps of tectonic boundaries and ocean currents near coastal areas. "We're very interested in [continental margins] because the ocean currents and tides will bring nutrients and sediments from the land to the ocean and influence the biodiversity and ecology in the coastal area," Yu said.

In the remainder of its planned three-year science mission, SWOT will continue to collect data on ocean currents, map the ocean floor and assess global freshwater availability throughout the year.

(Skyler Ware / LIVE SCIENCE, 12.12.2024, <https://www.livescience.com/planet-earth/rivers-oceans/satellites-reveal-stunningly-detailed-maps-of-earths-seafloors>)



The position of the magnetic north pole is officially changing. Why?

The updated version of the World Magnetic Model was released on Dec. 17, with a new prediction of how the magnetic north pole will shift over the next five years. Here's why it was changed.



A planned update to the World Magnetic Model will help ensure that navigational systems keep users on track for years to come. (Image credit: UniversalImagesGroup via Getty Images)

On Dec. 17, the National Centers for Environmental Information (NCEI) and the British Geological Survey (BGS) released an updated version of the World Magnetic Model, a prediction for how Earth's magnetic field will shift and change over the next five years.

The World Magnetic Model, which predicts the difference between magnetic north and true north at every point on Earth, plays an integral role in satellite and aircraft navigation and helps smartphone users orient themselves using services like Google Maps.

The update has been planned for years, and most users won't notice anything different as a result of the changes. But the changes are necessary to keep navigational systems functioning and to make better future predictions about Earth's magnetic field.

Why does Earth have a magnetic field?

Earth's main magnetic field is generated in the planet's outer core, a layer of molten iron 2,200-3,100 miles (2,890-5,000 kilometers) below the planet's surface. The electrically conductive liquid iron is in constant motion, and when it moves through an existing weak magnetic field, that motion produces an electric current. The electric current in turn generates its own magnetic field, leading to a self-sustaining process known as the geodynamo.

The geodynamo has continually regenerated Earth's magnetic field for billions of years. Without something to sustain the field, Earth would have lost its magnetic field after about 40,000 years, said Bruce Buffett, a geophysicist at the University of California, Berkeley.

"If you had a hot cannonball and you put it on the table, it would gradually cool. [The heat] would diffuse away and essentially go back to ambient," Buffett told Live Science. "The same is true with the magnetic field. If you're not sustaining it by these fluid motions, it will gradually decay away and disappear."

Where is the magnetic north pole?

The magnetic north pole is different from the geographic North Pole, which is always stationary. The geographic North Pole is the point where Earth's axis of rotation meets the planet's surface and where all lines of longitude converge.

The magnetic north pole, meanwhile, is the point in the Northern Hemisphere where Earth's magnetic field lines point directly into the planet.



The complex motion of the outer core causes the magnetic north pole to shift tens of miles per year. Because Earth's magnetic field is slightly asymmetrical and more complex than that of a regular bar magnet, the magnetic south pole — the point in the Southern Hemisphere where the magnetic field points straight into the planet — doesn't move in quite the same way. But changes in the strength of the magnetic field near the North Pole have caused it to shift from the Canadian Arctic toward Siberia in recent years.

What is the World Magnetic Model?

The World Magnetic Model is a mathematical model of Earth's magnetic field and a prediction for how the field will evolve over the next several years. The model combines data from satellites such as the European Space Agency's Swarm mission and from high-precision magnetometers at ground-based observatories to predict the magnetic field at each point on Earth.

Navigation apps use the World Magnetic Model along with GPS to orient users. "Your smartphone or GPS system has a magnetometer, effectively a digital compass built into it," said William Brown, a BGS geophysicist who helped create and update the World Magnetic Model. "It measures the direction of the magnetic field where you are, and it enters your position into the World Magnetic Model software to tell it what the magnetic field should look like. And then, by comparing what I measured and what I should have got, you can work out which direction you're facing."

Why is the World Magnetic Model being updated now?

A new version of the World Magnetic Model is released every five years to account for changes in the magnetic field from the motion of the outer core. This latest update is part of that five-year schedule.

"The real challenge is, and the reason why we release a model every five years, it doesn't change in a regular way. It's not completely predictable. It's a really complicated, chaotic system," Brown told Live Science. "Typically, about five years is when the accuracy of the model starts to get to the point where it's not as good as we would like it. So we make a better prediction with five years more information to work from, and just update the prediction going forward."

Small deviations from the predicted field can accumulate over time and occasionally compound to the point where the model must be updated more frequently. For example, the NCEI and BGS released an off-cycle update in 2019 to account for the outer core flowing faster than usual in the Northern Hemisphere — a phenomenon that caused the magnetic north pole to shift much more quickly than usual.

But for most people, the 2025 update won't result in any noticeable changes to navigation, and users won't have to change anything for phone map apps to work properly.

"You should be able to navigate as well as you could yesterday," Brown said. "We keep the updates coming so that it's only a bit of time, small enough that most people don't notice, because for most users, the accuracy is more than they need anyway."

(Skyler Ware / LIVESCIENCE, 19 Dec 2024, <https://www.livescience.com/planet-earth/the-position-of-the-magnetic-north-pole-is-officially-changing-why>)

The 10 biggest science experiments on Earth

From a telescope network that spans much of the globe to a psychology study that spans 67 countries, here are the biggest science experiments on the planet.



(Image credit: Lionel FLUSIN via Getty Images; Michigan State University; VCG via Getty Images; IceCube/NSF)

Sometimes science needs to go big. From telescopes spanning the globe to particle accelerators that would take over 24 hours to walk around, these experiments are among the largest ever conducted.

Gravitational wave hunting

Ripples in the gravitational field of the universe, known as gravitational waves, are remnants of massive galactic events such as black hole collisions and merging neutron stars. These waves may even record echoes of the Big Bang. To detect them, scientists need big equipment, such as the [Laser Interferometer Gravitational-wave Observatory](#) (LIGO).



(Image credit: Caltech/MIT/LIGO Lab)

LIGO consists of two large instruments, each with two 2.5-mile-long (4 kilometers) arms. The instruments are in Washington state and Louisiana, approximately 1,900 miles (3,000 km apart). The arms are laser interferometers, arranged in L shapes. A single laser beam is split in half, with each half sent down one of the arms. At the end of each arm is a set of mirrors, which bounce each half laser beam around a few hundred times and then back up the arms so they reunite.

By investigating the interference pattern — the way the peaks and troughs of the light waves combine — scientists can determine if a gravitational ripple happened during the experiment. If so, they can study it in detail. The larger the arms, the more sensitive the instrument, which is why LIGO boasts the longest laser interferometers ever built.

LIGO has detected all manner of mysterious galactic phenomena, from a merger between a neutron star and (probably) a superlight black hole to multiple collisions between neutron stars. (It has also detected a flock of ravens pecking on icicles at the Washington facility — an observation with fewer implications for the dynamics of the universe.)

World's largest atom smasher



(Image credit: Lionel FLUSIN via Getty Images)

To study the very small, scientists sometimes have to use very big instruments. They don't come bigger than the Large Hadron Collider (LHC), the world's largest particle accelerator. Run by CERN, the European Organization for Nuclear Research, this 16.7-mile-diameter (27 km) ring is studded with four detectors, known as ATLAS, CMS, ALICE and LHCb. Befitting its location, the 7,700-ton (7,000 metric tons) ATLAS is the largest particle detector ever built. The instrument measures a wide range of subatomic particles created when scientists zap particle beams at one another at high speed, creating collisions that throw off elusive elementary particles like the Higgs boson.

The LHC boasts over 10,000 tons (9,000 metric tons) of iron in its magnetic systems and enough niobium-titanium cable to stretch to the sun and back over six times and then between Earth and the moon another few times. It's also the largest, coldest refrigerator on Earth, because the magnets must be kept at minus 456.25 degrees Fahrenheit (minus 271.25 degrees Celsius), slightly colder than outer space.

Miniature Amazon rainforests



[Watch On](#)

By pumping tons of carbon dioxide (CO₂) into the atmosphere each year through the burning of fossil fuels, humanity is performing an extremely large-scale — and very uncontrolled — experiment. In the Amazon rainforest, researchers are trying to get a handle on the implications of those greenhouse gases in a large experiment of their own.

The project, called AmazonFACE, aims to amp up the carbon dioxide concentration in parts of the world's largest tropical

forest basin to understand the impacts of elevated CO₂ on the "lungs of the planet."

FACE stands for "Free-Air Carbon Dioxide Enrichment." The experiment consists of 12 observational arrays in six 98-foot-diameter (30 m) plots: three at ambient carbon dioxide concentrations and three at higher concentrations. The highest concentration — 615 parts per million — is predicted to be reached by the 2070s under a middle-of-the-road pathway to climate mitigation in which countries make slow and uneven progress toward sustainability.

Each plot contains around 400 plant species and many more specimens of fungus and soil microbes — a full ecosystem. As carbon dioxide increases, plants photosynthesize more quickly and release less water from their leaves, explained Beto Quesada, executive manager of the project and a researcher at the National Institute for Amazonian Research. This could help protect the forest from the impacts of climate change, which is expected to bring drought to the Amazon region.

But the balance between these two processes and the tipping point between a healthy forest and a collapsing ecosystem are unknown, said David Lapola, the project's scientific coordinator and a researcher at the Center for Meteorological and Climatic Research Applied to Agriculture of the University of Campinas (UNICAMP) in Brazil.

"We'll be trying to solve one of the biggest uncertainties with regard to the future of the Amazon forest in light of climate change," Lapola told Live Science.

The researchers will measure the impact of the extra CO₂ on plant physiology, including whether plants in a carbon-rich atmosphere add temporary structures, like leaves, or more permanent features, such as wood. This is important to study because wood locks up carbon for centuries, whereas carbon used to grow leaves reenters the environment within a year or two. The experiment is expected to run for at least a decade.

"It is an ecosystem-scale experiment," Quesada said, "but it's much more than that. It goes to the social, economical and environmental impacts that the loss of the rainforest will have."

A truly massive carbon capture facility



(Image credit: Equatic)

According to the Intergovernmental Panel on Climate Change, humanity doesn't just need to stop releasing carbon dioxide into the atmosphere to avoid raising the global temperature more than 1.5 C (2.7 F) above preindustrial levels. We also have to pull carbon back out of the air.

By 2050, 6 to 10 gigatons of carbon equivalent need to be removed to avoid hitting the warming threshold set by the Paris Agreement. There are many options for carbon sequestration, such as capturing industrial waste streams and burying biomass. But the first-ever commercial-scale marine

carbon-capture facility is aiming to remove carbon right from the ocean.

The ocean naturally takes up carbon from the atmosphere, but it can't absorb it fast enough to make a climatic difference on the scale of a human life span. The carbon-capture company Equatic is aiming to accelerate that timeline.

"Equatic's commercial plant takes five minutes to remove one tonne of carbon by pumping seawater in, running an electrical current through, and then contacting the seawater with a stream of air from the atmosphere," Edward Sanders, Equatic's chief operating officer, told Live Science in an email. "An equivalent area of open ocean takes 12 months to remove that one tonne of carbon."

The chemical process that removes the carbon from the seawater also creates hydrogen, a chemical that's for many industries and can be burned as fuel to power 40% of the energy costs of the carbon-capture process. The carbon is then sequestered as bicarbonate, the same material found in seashells, which will keep the carbon out of the atmosphere for up to 10,000 years. This bicarbonate can be put back in the sea or be used in fertilizers. It can also serve as a building material in coastal restoration, Sanders said.

Similar experiments have been done on a pilot scale, but Equatic's facility in Quebec will aim to sequester 120,700 tons (109,500 metric tons) of carbon per year starting in 2027. It will be the first commercial-scale attempt to make a dent in the greenhouse gas overload in the atmosphere via the oceans.

A world of babies

How do babies learn language? When do they understand gestures? Are they hardwired to imitate adults? All of these questions are tough to answer, because babies are challenging research subjects, prone to crying and unexpected naps.

The difficulty of recruiting busy, exhausted parents and their often-uncooperative infants to do research studies led to the birth of ManyBabies. This global collaboration of researchers from over 50 nations pools smaller-scale studies of infant development into large sample sizes — often thousands of babies.



(Image credit: Shutterstock)

The research collaboration has found that infants really do prefer baby talk to adult-style speech, suggesting that the natural tendency to coo about a baby's toesie-woesies is an evolutionary adaptation that helps them learn language. Researchers are now studying how babies develop an understanding of other people's beliefs — a skill known as theory of mind — and trying to figure out when they learn to apply abstract rules to situations. They're also developing new methods, such as eye-tracking technology and noninvasive brain imaging techniques, to find out what infants are learning.

A city-size chunk of Antarctic ice



(Image credit: IceCube/NSF)

Neutrinos are often called "ghost particles" because the nearly massless particles barely interact as they pass through matter. Because they rarely perturb other matter, they're difficult to detect. But finding neutrinos from distant cosmic sources can be a way to observe and analyze high-energy environments such as pulsars, supernovas and black holes.

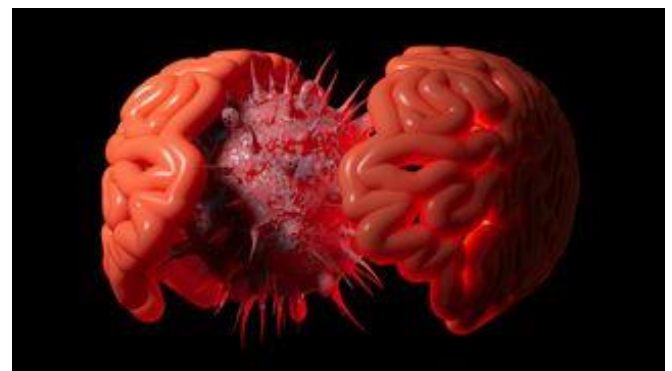
"We need a very big target, such as a billion tons of material, to have a fighting chance to — once in a while — catch some of them," said Albrecht Karle, a professor of physics at the University of Wisconsin-Madison.

Those billions of tons of material come from a cubic kilometer of ice at the South Pole. Karle is the associate director of science and instrumentation at the IceCube Neutrino Observatory, which is remarkable in both its size and remoteness. IceCube consists of a series of optical detectors on strings, running through holes drilled 4,800 to 8,000 feet (1,450 to 2,450 meters) into the Antarctic ice.

When a neutrino interacts with the ice, it creates other particles that emit tiny flashes of light. The sensors detect this light and can measure its wavelength to reveal the flavor of neutrino and its source. (That's why a transparent medium, such as ice, is important, Karle told Live Science — the material needs to be clear for the light to be detectable.)

IceCube data has allowed scientists to make the first map of the Milky Way using matter, not just light. The observatory has also revealed strange, high-energy cosmic rays with no easy explanation. And Karle and his colleagues have plans to go even bigger. They're currently drafting a plan for IceCube Gen-2, which would expand the current observatory to eight times its current size, with a 200-square-mile (500 square kilometers) radio detector array to amplify incoming neutrinos. This would massively increase the sensitivity of the detector and allow better classification of the neutrinos that pass through it, Karle said.

A globe-spanning psychology study



(Image credit: Uma Shankar sharma via Getty Images)

The COVID-19 pandemic was its own global experiment, albeit one with a massive number of uncontrolled variables.

Psychologists took advantage of this shared global experience with some of the largest psych studies of all time.

One, with almost 50,000 participants, found that people with a stronger national identity responded more cooperatively with public health efforts. Across 67 countries, people with a stronger feeling of identification with their nation were more likely than those with a weaker sense to stay put during quarantine, to support public health policies, and to say they engaged in social distancing and stricter physical hygiene after the onset of the pandemic. National identity is about a sense of collective belonging and mutual cooperation, the authors noted. This is different from beliefs about national superiority, which is a belief that one's country is better than others.

"These results are consistent with the social psychological literature on the benefits of identifying with one's social groups," the authors wrote. "They also underscore a potential benefit of [national identity], which might be salient during a national or global health crisis."

Another major COVID-era study, with nearly 27,000 participants, found that messages emphasizing autonomy encouraged adherence to social distancing recommendations. The study tested different social distancing messaging strategies across 89 countries and found that those that focused on personal autonomy and the value of thoughtful choices were more effective than messages that emphasized shame and pressure.

A centuries-long plant experiment

Small in size but big in duration, Michigan State University botanist William James Beal's seed viability experiment has been running continuously since 1879. The goal of this experiment is to find out how long seeds of different plants can lie dormant before sprouting. To find out, Beal buried bottles of seeds from 23 different plants 3 feet (0.9 m) deep in an undisturbed (and secret) location so they could not sprout. He started unearthing bottles in five-year increments — a gap that was eventually stretched to every 10 years.



(Image credit: Michigan State University)

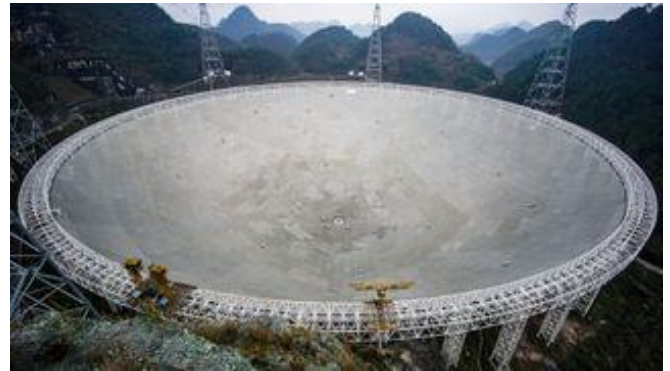
Incredibly, the experiment is still running — and now, researchers are stretching the gap between bottle openings to 20 years, because seeds just keep sprouting. The last bottles were opened in 2021, and the next set will get their time to shine in 2040. The findings have implications for plant evolution and seed germination and might be useful for understanding the process of habitat restoration and seed banking, or saving seeds for potential use in the distant future.

The plan is to keep the experiment running until 2100, according to Michigan State. Will that be enough time to find the maximum age any of their seeds can sit before sprouting? Probably not; plants have sprouted from seeds up to 2,000 years old.

China's monstrously huge radio telescope

China's Five-hundred-meter Aperture Spherical Telescope

(FAST) array is the world's largest single-dish radio telescope, at 1,640 feet in diameter. Holding up the dish are 328-foot (100 m) steel towers and 6,670 cables. Now, a new phase of construction is adding 24 131-foot (40 m) movable radio telescopes to the facility.



(Image credit: VCG via Getty Images)

The array sits in a natural depression called Dawodang in the rugged topography of China's Guizhou province. This shields it from electromagnetic interference from human sources and increases its sensitivity to cosmic radio signals. The goal, according to the Chinese Academy of Sciences (CAS), is to use the telescope's sensitivity to conduct large-scale surveys of the universe.

FAST started operating at full capacity in 2020 and has already discovered more than 200 pulsars, which are rotating neutron stars that emit regular pulses of electromagnetic radiation. These include the pulsar PSR J0318+0253, which, at 4,000 light-years away and with a rotation period of less than 10 milliseconds, is one of the faintest radio millisecond pulsars ever found, according to CAS.

A telescope network that spans most of the world



(Image credit: EHT Collaboration)

What could you see with a telescope the size of the world? Well, the black hole at the heart of the Milky Way, for one thing.

The Event Horizon Telescope (EHT) is a network of radio telescopes stretching from Greenland to the South Pole (north to south) and from Spain to Hawaii (east to west). The exact number of observatories in the EHT shifts with time (it was 11 as of 2021), and new telescopes will be added in the future — including one planned for the Canary Islands.

These observatories work together to detect faint radio signals associated with black holes. This collaboration generated the first-ever view of a black hole, including the contours of the event horizon, the boundary through which no light or matter can escape. Scientists have also seen the mesmerizing swirl of the black hole at the center of our own galaxy and observed giant electromagnetic jets shooting from the supermassive black hole at the heart of the galaxy Perseus A. Re-

cently, they peered into the heart of a quasar, a superluminous galactic core powered by a massive black hole.

The EHT needs to be large because it relies on the ability to observe the universe continuously over eight- to 14-hour stretches from several angles, according to the Black Hole Partnerships for International Research and Education, a collaboration that develops the algorithms used by the telescope. These algorithms also rely on Earth's rotation to overlap observations, allowing researchers to combine images from numerous telescopes. Only then can they peer into some of the biggest, yet hardest-to-see phenomena in the universe.

(Stephanie Pappas / LIVESCIENCE, 26 Dec. 2024, <https://www.livescience.com/planet-earth/the-10-biggest-science-experiments-on-earth>)

ΝΕΕΣ ΕΚΔΟΣΕΙΣ ΣΤΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΠΙΣΤΗΜΕΣ



Tunnel Design Guideline

Second Edition

Celebrating Innovation in Tunnelling: The Second Edition of the ATS Tunnel Design Guideline Is Here

The ATS is proud to announce the publication of the much-anticipated **Second Edition of the ATS Tunnel Design Guideline**, marking another milestone in supporting tunnelling and underground engineers across the industry.

This updated edition reflects the sector's rapid evolution, particularly as governments and businesses strive toward decarbonisation, digitalisation, and sustainability. The guideline provides a comprehensive reference for elementary tunnel design practice in Australia, offering insights into foundational principles while addressing the challenges and opportunities presented by modern tunnelling projects.

A collaborative journey

The journey began in 2018 when the ATS Young Members (ATSYMs) identified the need for an accessible, foundational reference for tunnel design during the ATS Tunnel Design Short Course. The first edition of the guideline was launched in 2020 to great acclaim, quickly becoming a valued resource across the industry.

Recognising its role as a "living document," the ATS reconvened a dynamic group of original and new authors in 2023 to develop the second edition.

This collaborative team, supported by extensive internal and external consultations, has introduced six brand-new chapters to address emerging priorities:

- Tunnel spaceproofing and geometry
- Hydrogeology
- Fire and life safety
- Digital engineering
- Durability
- Sustainability

In addition, the second edition includes updates and refinements to existing content based on invaluable industry feedback received during the review process.

A resource for all

While the guideline is not intended to serve as a design standard or specification, it provides introductory insights, practical considerations, and references for further reading. Engineers, from those just starting their careers to expe-

rienced professionals, will find the resource invaluable as they navigate the design choices that define successful tunnelling projects.

ATS members can access the PDF for free through the Members Section under "Technical Papers," while non-members may purchase it here: [ATS Tunnel Design Guideline](#)

Be part of the future

The ATS welcomes ongoing feedback and contributions to continue refining this vital resource. If you'd like to share your thoughts or participate in the development of the third edition, [please complete the feedback form](#).

The Second Edition of the ATS Tunnel Design Guideline is more than just an update—it's a testament to the power of collaboration and a reflection of the industry's commitment to innovation and excellence. Download your copy today and take the next step in advancing your knowledge and practice in tunnelling.

(ATS, November 2024)

ΗΛΕΚΤΡΟΝΙΚΑ ΠΕΡΙΟΔΙΚΑ

- Digging Deep at Kidston
- Evolution and Future of Underground Space



Κυκλοφόρησε το ISRM Newsletter No. 68 - Winter 2024 με τα ακόλουθα περιεχόμενα:

- [Message from the President](#)
- [Eurock2025 and ISRM International Symposium 2025, Trondheim, Norway, 16-20 June 2025](#)
- [47th ISRM Online Lecture by Dr. Sylvie Gentier](#)
- [ISRM Tribute to Dr. Evert Hoek \(by C. Fairhurst and E.T. Brown\)](#)
- [Scientific Farewell to Dr. Hoek](#)
- [Videos of the 2024 ISRM Awards available on the website](#)
- [ISRM Workshop on Soft Rocks \(ISRM-WSR2025\) - 15-16 May 2025, Porto, Portugal](#)
- [VIETROCK2024 was held in Hanoi, 26 October, an ISRM sponsored conference](#)
- [ISRM Young Members' Seminar on the ISRM Young Members YouTube channel](#)
- [6th European Rock Mechanics Debate on the ISRM YouTube channel](#)
- [ISRM Sponsored Conferences](#)



<https://content.yudu.com/web/442ay/0A444ia/Tunnels1224-SM/html/index.html?page=34&origin=reader>
(Social Media Version)

Κυκλοφόρησε το τεύχος Δεκεμβρίου 2024 του περιοδικού TUNNELS & TUNNEMMING INTERNATIONAL (Official Magazine of the British Tunnelling Society), με ενδιαφέροντα άρθρα, μεταξύ των οποίων:

- Data Focus on Road Tunnels
- Artificial Ground Freezing
- Salt Tome Storage



Geosynthetics International www.icevirtuallibrary.com/toc/igein/31/6

Κυκλοφόρησε το τεύχος Volume 31, Issue 6, December, 2024 του Geosynthetics International της International Geosynthetics Society με τα ακόλουθα περιεχόμενα:

Editorial

[Celebrating 30 years of Geosynthetics International, R.J. Bathurst](#), 31(6), pp. 806–807

Research Articles

[Thermo-hydraulic numerical modelling of in-soil conditions in reinforced soil walls, A. Moncada, I. P. Damians, S. Olivella, R. J. Bathurst](#), 31(6), pp. 808–823

[GMX/GDC strength loss mechanisms, J. Lin, T. D. Stark, A. Idries, S. Choi](#), 31(6), pp. 824–834

[Probabilistic analysis for the reinforced fill over void problem, R. J. Bathurst, F. M. Naftchali](#), 31(6), pp. 835–861

[Durability of geogrid in a sloped reinforced soil wall after 25 years in service, V. S. Quinteros, R. J. Fannin](#), 31(6), pp. 862–874

[Dynamic properties of frozen rubber-reinforced expansive soils under confining pressure, Z. Yang, Z. Cheng, Y. Cui, X. Ling, W. Shi](#), 31(6), pp. 875–887

[Modeling geogrid-stabilized aggregate base courses considering local stiffness enhancement, Y.-H. Byun, I. I. A. Qamhia, M. Kang, E. Tutumluer, M. H. Wayne](#), 31(6), pp. 888–897

[Assessment of the stress crack resistance of multilayered textured HDPE geomembranes, F. B. Abdelaal, M. Zafari, R. K. Rowe](#), 31(6), pp. 898–912

[Permeability mechanism of PVC-P geomembranes based on low-field NMR technology, X. L. Zhang, Y. Y. Wu, C. J. Yin, X. Y. Gu](#), 31(6), pp. 913–926

[Modular polymer stormwater collection structure response to one-week design-truck load, R. W. I. Brachman, A. Zarpeima, J. M. LeBlanc](#), 31(6), pp. 927–941

[Combined bearing capacity of footings on geogrid-reinforced granular fill over soft clay, M. Fatehi, B. Yaghoobi, M.](#)

[Payan, I. Hosseinpour, R. Jamshidi Chenari](#), 31(6), pp. 942-967

[Study on performance of geocell-reinforced red clay subgrade](#), X. W. Luo, Z. Lu, J. B. Zhang, H. L. Yao, 31(6), pp. 968-980

[A nonlinear analytical model for consolidated geotextile-encased sand columns](#), H.-J. Kim, P. R. Dinoy, H.-J. Kim, V. A. Corsino Jr, Y.-S. Jounq, J.-Y. Park, 31(6), pp. 981-998

[Response of sensor-enabled piezoelectric geobelt reinforced soil pullout friction signals](#), Y. Rao, Z. Liu, G. Ding, Z. Gao, J. Wang, H. Wang, X. Wu, 31(6), pp. 999-1010

[Extrapolating residual GMX/GDC interface strength from direct shear tests](#), J. Lin, T. D. Stark, A. Idries, 31(6), pp. 1011-1021

[Equivalent analytical models for assessment of landfill composite liners](#), H. Xie, W. Xu, L. Wang, H. Yan, J. Wu, 31(6), pp. 1022-1035

[Vacuum consolidation of dredged slurry improved by horizontal drainage-enhanced geotextile](#), J. Wang, R. Anda, H. Fu, X. Hu, X. Li, Y. Cai, 31(6), pp. 1036-1046

[Response of shallow foundations in tire derived aggregate](#), A. A. Yarahuaman, J. S. McCartney, 31(6), pp. 1047-1062

[Ultimate bearing capacity of geosynthetic reinforced soil abutment centrifuge model tests](#), C. Zhao, C. Xu, Y. Yang, Q. Wang, C. Du, G. Li, 31(6), pp. 1063-1076

[Response of anchor foundations in geogrid reinforced sand under combined loads](#), S. Mukherjee, G. L. Sivakumar Babu, 31(6), pp. 1077-1090

[Uniaxial compression test of cement-solidified dredged slurry columns encased with geogrid](#), C. C. Qiu, G. Z. Xu, G. Q. Gu, W. Z. Song, D. H. Cao, 31(6), pp. 1091-1107

[Application of the digital image correlation technique in wide width tensile test of geogrids](#), Wooseok Shin, Chungsik Yoo, Pages 1087-1098

[Experimental evaluation on in-soil water migration reducing performance of restraining moisture geotextile \(RMG\)](#), Yilin Wang, Xinzhuang Cui, Qing Jin, Xiaoning Zhang, ... Guoyang Lu, Pages 1099-1111

[Evaluating the mechanisms and performance of Geosynthetic-Reinforced Load Transfer Platform of pile-supported embankments design methods](#), M. Nobahar, M.Y. Abu-Far-sakh, M. Izadifar, Pages 1112-1133

[Creep rupture behaviour of elastomeric bituminous geomembrane seams](#), Jiying Fan, R. Kerry Rowe, Pages 1134-1144

[Improving clay-geogrid interaction: Enhancing pullout resistance with recycled concrete aggregate encapsulation](#), Sajedah Malek Ghasemi, Seyed Mohammad Binesh, Piltan Tabatabaie Shourijeh, Pages 1145-1160

[Investigation of soil arching in GRPS embankments under localized loading: Multi-span spring-based trapdoor model test](#), Jie Zhou, Ling Zhang, Mengchao Deng, Zeyu Xu, ... Wenzhe Peng, Pages 1161-1179

[Laboratory evaluation of wicking geotextile for moisture reduction in silty sands at different fines contents](#), Md Wasif Zaman, Jie Han, Mozaher Ul Kabir, Robert L. Parsons, Pages 1180-1190

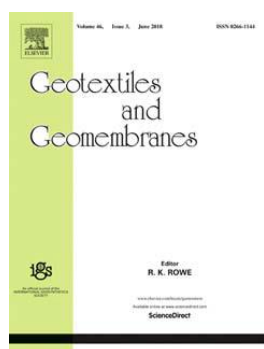
[Parameters affecting performance of fully instrumented model testing of strip footings on geocell-reinforced soils](#), Sarper Demirdogen, Ayhan Gurbuz, Kaan Yunkul, Pages 1191-1206

[Dynamic response and damage of pile-geogrid composite reinforced high-speed railway subgrade under seismic actions](#), Changwei Yang, Xianqing Xu, Mao Yue, Guangpeng Chen, ... Liming Qu, Pages 1207-1221

[Analytical model of three-dimensional concentric ellipsoidal soil arching in geosynthetic-reinforced pile-supported embankments](#), Rong Sun, Xin Jiang, Lei Zhang, Canyang Cui, ... Yanjun Qiu, Pages 1222-1239

[Research on the aging mechanism of polypropylene nonwoven geotextiles under simulated heavy metal aging scenarios](#), Yuqi Peng, Zongqiang Zhu, Jun Zhang, Yinian Zhu, ... Yifan Xin, Pages 1240-1250

[Tensile behavior of needle-punched nonwoven geotextiles based on in-situ X-ray computed tomography and numerical simulation](#), Ke-Yi Li, Xiao-Wu Tang, Min-Liang Fei, Shi-jin Feng, ... Heng-yu Wang, Pages 1251-1263



Geotextiles and Geomembranes www.sciencedirect.com/journal/geotextiles-and-geomembranes/vol/52/issue/6

Κυκλοφόρησε το τεύχος Volume 52, Issue 6, December, 2024 του Geotextiles and Geomembranes της International Geosynthetics Society με τα ακόλουθα περιεχόμενα:

[Editorial Board](#), Page ii

Regular Articles

ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ ΕΕΕΕΓΜ (2023 – 2026)

- Πρόεδρος : Μιχάλης ΜΠΑΡΔΑΝΗΣ, Δρ. Πολιτικός Μηχανικός, ΕΔΑΦΟΣ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Α.Ε.
mbardanis@edafos.gr, lab@edafos.gr
- Α΄ Αντιπρόεδρος : Σταυρούλα ΚΟΝΤΟΕ, Δρ. Πολιτικός Μηχανικός, Αναπληρώτρια Καθηγήτρια Τμήμα Πολιτικών Μηχανικών Πανεπιστήμιο Πατρών
skontoe@upatras.gr
- Β΄ Αντιπρόεδρος : Νίκος ΚΛΗΜΗΣ, Δρ. Πολιτικός Μηχανικός, Καθηγητής Τμήμα Πολιτικών Μηχανικών, Πολυτεχνική Σχολή, Δημοκρίτειο Πανεπιστήμιο Θράκης
nklimis@civil.duth.gr, nsklimis@gmail.com
- Γενικός Γραμματέας : Γιώργος ΜΠΕΛΟΚΑΣ, Δρ. Πολιτικός Μηχανικός, Επίκουρος Καθηγητής Τμήμα Πολιτικών Μηχανικών Σχολή Μηχανικών Πανεπιστημίου Δυτικής Αττικής
gbelokas@uniwa.gr, gbelokas@gmail.com
- Ταμίας : Γιάννης ΖΕΥΓΩΛΗΣ, Δρ. Μηχανικός Μεταλλείων - Μεταλλουργός, Αναπληρωτής Καθηγητής Σχολή Μεταλλειολόγων - Μεταλλουργών Μηχανικών ΕΜΠ
izevgolis@metal.ntua.gr
- Έφορος : Τάσος ΑΝΑΣΤΑΣΙΑΔΗΣ, Δρ. Πολιτικός Μηχανικός, Καθηγητής Τμήμα Πολιτικών Μηχανικών Αριστοτελείου Πανεπιστημίου Θεσσαλονίκης
anas@civil.auth.gr
- Μέλη : Γιώργος ΝΤΟΥΛΗΣ, Πολιτικός Μηχανικός, ΕΔΑΦΟΜΗΧΑΝΙΚΗ Α.Ε.- ΓΕΩΤΕΧΝΙΚΕΣ ΜΕΛΕΤΕΣ Α.Ε.
gdoulis@edafomichaniki.gr
Μαρίνα ΠΑΝΤΑΖΙΔΟΥ, Δρ. Πολιτικός Μηχανικός, Αναπληρώτρια Καθηγήτρια Σχολή Πολιτικών Μηχανικών Ε.Μ.Π.
mpanta@central.ntua.gr
Χρήστος ΤΣΑΤΣΑΝΙΦΟΣ, Δρ. Πολιτικός Μηχανικός, ΠΑΝΓΑΙΑ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Ι.Κ.Ε.
editor@hssmge.gr, ctsatsanifos@pangaea.gr
- Αναπληρωματικά Μέλη : Δημήτρης ΠΙΤΙΛΑΚΗΣ, Δρ. Πολιτικός Μηχανικός, Αναπληρωτής Καθηγητής Τμήμα Πολιτικών Μηχανικών Αριστοτελείου Πανεπιστημίου Θεσσαλονίκης
dpitilakis@civil.auth.gr
Χρήστος ΣΤΡΑΤΑΚΟΣ, Πολιτικός Μηχανικός, NAMALAB Α.Ε.
stratakos@namalab.gr
Χάρης ΛΑΜΑΡΗΣ, Πολιτικός Μηχανικός, ΧΑΡΗΣ Π. ΛΑΜΑΡΗΣ ΚΑΙ ΣΥΝΕΡΓΑΤΕΣ ΙΚΕ
h.lamaris@lamaris.gr
Πρόδρομος ΨΑΡΡΟΠΟΥΛΟΣ, Δρ. Πολιτικός Μηχανικός
prod@central.ntua.gr
- Εκδότης : Χρήστος ΤΣΑΤΣΑΝΙΦΟΣ, Δρ. Πολιτικός Μηχανικός, ΠΑΝΓΑΙΑ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Ι.Κ.Ε.
editor@hssmge.gr, ctsatsanifos@pangaea.gr

ΕΕΕΕΓΜ

Τομέας Γεωτεχνικής
ΣΧΟΛΗ ΠΟΛΙΤΙΚΩΝ ΜΗΧΑΝΙΚΩΝ
ΕΘΝΙΚΟΥ ΜΕΤΣΟΒΙΟΥ ΠΟΛΥΤΕΧΝΕΙΟΥ
Πολυτεχνειούπολη Ζωγράφου
15780 ΖΩΓΡΑΦΟΥ

Τηλ. 210.7723434
Τοτ. 210.7723428
Ηλ-Δι. secretariat@hssmge.gr ,
geotech@central.ntua.gr
Ιστοσελίδα www.hssmge.org (υπό κατασκευή)

«ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ» Εκδότης: Χρήστος Τσατσανίφος, τηλ. 210.6929484, τοτ. 210.6928137, ηλ-δι. ctsatsanifos@pangaea.gr, editor@hssmge.gr, info@pangaea.gr

«ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ» «αναρτώνται» και στην ιστοσελίδα www.hssmge.gr