



Tunnel boring for London's Silvertown Tunnel

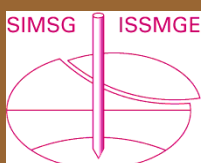


ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

Τα Νέα της ΕΕΕΕΓΜ

180

Αρ. 180 – ΟΚΤΩΒΡΙΟΣ 2023



ΟΡΓΑΝΩΣΗ:
ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
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ΜΗΧΑΝΙΚΗΣ

90
**ΠΑΝΕΛΛΗΝΙΟ
ΣΥΝΕΔΡΙΟ
ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ**

Συνεδριακό Κέντρο
του Πανεπιστημίου
Δυτικής Αττικής στην
Πανεπιστημιούπολη
Αρχαίου Ελαιώνα
Αιγάλεω, Αθήνα

4-6 Οκτωβρίου 2023 www.9hcge2023.gr

ERASMUS
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9ο Πανελλήνιο Συνέδριο Γεωτεχνικής Μηχανικής
Αθήνα, 4 έως 6 Οκτωβρίου 2023
Συνεδριακό Κέντρο Πανεπιστημιούπολης Αρχαίου
Ελαιώνα
Πανεπιστήμιο Δυτικής Αττικής

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. Ξανάκης, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Μ. Πανταζίδου, 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. Τσατσάνιφας, Εκτελεστική Επιτροπή Ε.Ε.Ε.Ε.Γ.Μ.
Ν. Ρούσσος, 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. Πιπλιάκης, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
Στ. Κοντοές, 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. Δελιβέρης
Δ. Εγγλέζος
Α. Θεοχάρης
Α. Καπουνιάρης
Ζ. Καρατζά
Α. Καρατζετζου
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 (ΕΣΒΥΚ) 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 14^{ης} Αθηναϊκής Διάλεξης Γεωτεχνικής Μηχανικής έκανε ο Πρόεδρος της ΕΕΕΕΓΜ, Μ. Μπαρδάνης.



Σ. Λαμπρόπουλος, Πρόεδρος ΕΣΒΥΚ, Ομ Καθ. ΕΜΠ
Ε. Σοφοκλέους, Πρόεδρος ΚΕΕΕΓΜ



Γ. Ντούλης, Γ.Γ. ΣΕΓΜ, Ταμίας ΕΕΕΕΓΜ
Μ. Μπαρδάνης, Πρόεδρος ΕΕΕΕΓΜ

4. Ομιλίες

Κατά την διάρκεια του 9^{ου} Πανελληνίου Συνεδρίου πραγματοποιήθηκε η 14^η 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 14^η Αθηναϊκή Διάλεξη μαγνητοσκοπήθηκε και θα αναρτηθεί εντός των ημερών στο κανάλι που διατηρεί η ΕΕΕΕΓΜ στο youtube (<https://www.youtube.com/@thechannelofhssmge5899/vid eos>)



P. W. Mayne, Geoengineering Consultant, Emeritus Prof.
Georgia Institute of Technology

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 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"

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/@thechannelofhssmge5899/vid eos>).



J. G. Zornberg Ph.D., P.E., F. ASCE, Prof. University of Texas at Austin, Past-President, International Geosynthetic Society



L. Batali, Prof. Technical University of Civil Engineering Bucharest

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 Προσάρτημα»
- Νομικός Π. «Προς μία ρεαλιστική μοντελοποίηση της μηχανικής συμπεριφοράς της βραχομάζας»
- Διδασκάλου Γ. «Παρουσίαση του επίπεδου Ντιλατομέτρου τύπου Marchetti, 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 πρηνές 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»



A. Ρίτσος



E. Ρήγα



Π. Νομικός



Γ. Διδασκάλου



Δ. Λουκίδης



Ε. Γαρίνη



Ρ. Κουρκουλής



Α. Πιπλάκης



Α. Παπαδημητρίου



Α. Κωμοδρόμος



Μ. Μπαρδάνης



Γ. Μπελόκας



Γ. Τσιαμπός



Γ. Στούμπος

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:

- Τσιαμπός 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»
- Καζίλης 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/@thechannelofhssmge5899/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.



N. Καζίλης

B. Μαρίνος

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



Απονομή Τιμητικής Πλακέτας της ΕΕΕΕΓΜ στον Β. Μαρίνο για την προσφορά του Παύλου Μαρίνου

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 - Βαθείες 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. Σύεδροι

Στο συνέδριο εγγράφηκαν 376 σύεδροι οι οποίοι κατανέμονται ως ακολούθως:

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



Κεντρικό Αμφιθέατρο



Παράλληλη Αίθουσα



Κεντρικό Αμφιθέατρο



Παράλληλη Αίθουσα



Παράλληλη Αίθουσα



Είσοδος Συνεδριακού



Κεντρικό Αμφιθέατρο

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 Farrance Hellenplan
- 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





Τεχνική Έκθεση

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 για 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 Τσατσανίφο του επόμενου Παγκοσμίου Συνεδρίου για τη Γεωτεχνική Μηχανική και Μνημεία που θα γίνει στην Ελλάδα πιθανότατα τον Σεπτέμβριο του 2026 στην Αθήνα.



Χρ. Τσατσανίφος, παρουσίαση επικείμενου Παγκοσμίου Συνεδρίου για τη Γεωτεχνική Μηχανική και Μνημεία το 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 πολύετή προσφορά τους στην ΕΕΕΕΓΜ.



Τιμητική Πλακέτα στον Μ. Παχάκη - Τιμητική Πλακέτα στον Π. Βέττα (παραλαβή Κ. Πλυτάς)



Εκλογοαπολογιστική Γενική Συνέλευση ΕΕΕΕΓΜ

Η Τακτική Γενική Συνέλευση της ΕΕΕΕΓΜ διεξήχθη την 5η Οκτωβρίου 2023 στο Συνεδριακό Κέντρο Αρχαίου Ελαιώνα του Πανεπιστημίου Δυτικής Αττικής, με την ακόλουθη Ημερήσια Διάταξη:

ΘΕΜΑΤΑ ΗΜΕΡΗΣΙΑΣ ΔΙΑΤΑΞΗΣ

ΘΕΜΑ 1ο: Πεπραγμένα Εκτελεστικής Επιτροπής

ΘΕΜΑ 2ο: Οικονομικός Απολογισμός

ΘΕΜΑ 3ο: Έκθεση Εξελεγκτικής Επιτροπής

ΘΕΜΑ 4ο: Ψηφοφορία για Προτάσεις Αλλαγής Καταστατικού

ΘΕΜΑ 5ο: Εκλογές για ανάδειξη νέας Εκτελεστικής και Εξελεγκτικής Επιτροπής

Θέμα 1^ο: ΕΚΘΕΣΗ ΠΕΠΡΑΓΜΕΝΩΝ (08/11/2019 – 05/10/2023)

1. ΕΙΣΑΓΩΓΗ – Η ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ

Η τρέχουσα Γενική Συνέλευση είναι εκλογο-απολογιστική πεπραγμένων της περιόδου 08/11/2019 – 29/3/2023. Η σύνθεση της εκτελεστικής επιτροπής σε όλη περίοδο έχει ως εξής:

Πρόεδρος: Μιχάλης Μπαρδάνης,

Α' Αντιπρόεδρος: Χρήστος Τσατσάνιφος

Β' Αντιπρόεδρος: Μιχάλης Παχάκης

Γενικός Γραμματέας: Γεώργιος Μπελόκας

Ταμίας: Γεώργιος Ντούλης

Έφορος: Γεώργιος Γκαζέτας

Μέλη: Ανδρέας Αναγνωστόπουλος

Παναγιώτης Βέττας

Μαρίνα Πανταζίδου

Α' Αναπληρωματικό Μέλος: Χρ. Στρατάκος

Β' Αναπληρωματικό Μέλος: Β. Ξενάκη

Λοιπά αναπληρωματικά μέλη: Ι. Ζευγώλης

Κ. Πλυτάς

Εξελεγκτική Επιτροπή αποτελείται από τους συναδέλφους:

Ανάργυρος Αλεξανδρής

Απόστολος Κοζομπόλης

Πάυλος Τυρολόγου

Η Εκτελεστική Επιτροπή κατά την περίοδο από της εκλογής της μέχρι σήμερα συνεδρίασε 21 φορές, 17 εξ αυτών διαδικτυακά λόγω της πανδημίας. 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

Από τον Σεπτέμβριο του 2021 ενεγράφησαν στην ΕΕΕΕΓΜ τα ακόλουθα 33 νέα μέλη και μία επανεγγραφή:

1. Αμπαριώτη Μαρία, Μεταλλειολόγος Μηχανικός – Μηχανικός Ορυκτών Πόρων

2. Βούλγαρη Χρυσούλα, Δρ Πολιτικός Μηχανικός

3. Βρατσικίδης Αθανάσιος, Πολιτικός Μηχανικός, MSc
 4. Γεωργαράκος Παναγιώτης, Πολιτικός Μηχανικός
 5. Γραμμένος Θωμάς, Πολιτικός Μηχανικός, MSc
 6. Γκίκας Βασίλειος, Δρ Μεταλλειολόγος-Μεταλλουργός Μηχανικός.
 7. Δρόσος Βασίλειος, Δρ Πολιτικός Μηχανικός.
 8. Ζερβός Αντώνιος, Επίκουρος Καθηγητής ΕΜΠ
 9. Ζιωτοπούλου Κατερίνα, Assistant Professor UC Davis
 10. Θεοχάρης Αλέξανδρος, Δρ Πολιτικός Μηχανικός
 11. Καμπάς Γεώργιος, Δρ Πολιτικός Μηχανικός
 12. Καρατζέτζου Άννα, Δρ Πολιτικός Μηχανικός
 13. Καραφαγκά Στέλλα, Δρ Πολιτικός Μηχανικός
 14. Κατερίνα Καφαμπέλη, Μεταλλειολόγος Μηχανικός & Τοπογράφος Μηχανικός
 15. Κεμεντζετζίδης Ευάγγελος, Πολιτικός Μηχανικός, MSc
 16. Λαζαρίδου Σεραφίνα, Πολιτικός Μηχανικός
 17. Λημναίου Ταξιάρχουλα, Δρ Πολιτικός Μηχανικός
 18. Λουπασάκης Κωνσταντίνος, Καθηγητής ΕΜΠ
 19. Λοτίδης Μιχαήλ, Δρ Μεταλλειολόγος-Μεταλλουργός Μηχανικός
 20. Μάγνης Αριστομένης, Πολιτικός Μηχανικός, MSc
 21. Μπιλέρης Χρήστος, Πολιτικός Μηχανικός
 22. Μπενάρδος Ανδρέας, Καθηγητής ΕΜΠ
 23. Νομικός Παύλος, Καθηγητής ΕΜΠ
 24. Παπαμύχος Ευριπίδης, Καθηγητής ΑΠΘ
 25. Πεταλάς Αλέξανδρος, Δρ Μεταλλειολόγος-Μεταλλουργός Μηχανικός
 26. Πριμέτης Κωνσταντίνος, Μεταλλειολόγος-Μεταλλουργός Μηχανικός, MSc
 27. Ρίζος Δημήτρης, Πολιτικός Μηχανικός
 28. Ρούσος Νικόλαος, Μεταλλειολόγος-Μεταλλουργός Μηχανικός Μηχανικός, MSc
 29. Τίγκας Λυσίμαχος, Πολιτικός Μηχανικός MSc.
 30. Τσιαμπούση Κατερίνα, Senior Lecturer Imperial College
 31. Τσουτσας Δημήτριος, Μεταλλειολόγος-Μεταλλουργός Μηχανικός, MSc
 32. Τύρη Δανάη – Παναγιώτα, Δρ Πολιτικός Μηχανικός
 33. Χόρτης Φίλιππος, Δρ Πολιτικός Μηχανικός
- Επανεγγραφή:

34. Μαρία Ιακωβίδου, Πολιτικός Μηχανικός

3. ΕΚΔΗΛΩΣΕΙΣ ΤΗΣ ΕΕΕΕΓΜ

3.1 8ο ΠΑΓΚΟΣΜΙΟ ΣΥΝΕΔΡΙΟ ΜΗ ΚΟΡΕΣΜΕΝΩΝ ΕΔΑΦΩΝ – UNSAT2023

Το UNSAT2023 διοργανώθηκε από την ΕΕΕΕΓΜ με κεντρικό θέμα "Towards Unsaturated Soils Engineering" και πρόεδρο της οργανωτικής επιτροπής τον Μιχάλη Μπαρδάνη στο διάστημα από 2 έως 5 Μαΐου 2023, στο Συνεδριακό Κέντρο Ηλίουπoulos στη Μήλο. Το συνέδριο ολοκληρώθηκε με επιτυχία. Περισσότεροι από εκατόν πενήντα εργασίες συμπεριλήφθηκαν στα Πρακτικά μαζί με τις γραπτές εκδόσεις των 8 Ειδικών Διαλέξεων, 1 Κεντρικής από τον Charles Ng και της 3ης Διάλεξης Blight από τον Eduardo Alonso, η οποία είναι ήδη ανεβασμένη στο κανάλι youtube της ΕΕΕΕΓΜ.

Το συνέδριο οργανώθηκε σε 24 συνεδρίες (συμπεριλαμβανομένης μιας συνεδρίας ανοικτής συζήτησης σε πάνελ) συν δύο συνεδρίες ολομέλειας για προσκεκλημένες διαλέξεις και μια συνεδρία παρουσίασης αφίσας σε παράλληλη αίθουσα. Οι συνεδρίες οργανώθηκαν με κορυφαία σειρά από θεμελιώδεις αρχές του θέματος προς πιο εξειδικευμένα θέματα για το θέμα και θέματα που αλληλεπιδρούν με άλλα θέματα. Οκτώ από τις συνεδρίες περιελάμβαναν τις οκτώ θεματικές διαλέξεις του συνεδρίου. Οι συνεδρίες ήταν:

Στις καινοτομίες του συνεδρίου περιλαμβάνονται:

- Οι προσυνηδριακές δραστηριότητες:
 - α) Workshop: Long-term measurement of soil suction in the field and its modelling
 - β) Short Course: Introduction to Unsaturated Soil Mechanics and its importance in Geotechnical Practice
- Η ανοικτή συζήτηση:
Unsaturated Soil Mechanics instruction: Guiding the non-specialist instructor. A panel discussion
- Η επίδειξη σταθμού λήψης μακροχρόνιων μετρήσεων πεδίου.
- Η αλληλεπίδραση με άλλες Τεχνικές Επιτροπές:
 - α) Συνεδρία «Unsaturated Soil Mechanics instruction: Guiding the non-specialist instructor» (TC306)
 - β) Συνεδρία «Unsaturated ground mechanics in the preservation and pathology of historic monuments». (TC301).
 - γ) Λοιπές συνεδρίες που αποτελούσαν «γέφυρες» με θέματα άλλων Τεχνικών Επιτροπών. Αν και δημιουργήθηκαν μετά την παραλαβή των εργασιών, ο αριθμός των εργασιών αποδείχθηκε επαρκής για να υποστηρίξει μια συγκεκριμένη συνεδρία για ειδικά θέματα (για παράδειγμα η συνεδρία «Μερική κορεσμός και απορρίμματα»).

Ιδιαίτερες ευχαριστίες πρέπει να δοθούν στην Αναπληρώτρια Καθηγήτρια Μαρίνα Πανταζίδου, Πρόεδρο της Τεχνικής Επιτροπής TC306 «Εκπαίδευση Γεωμηχανικής» και στον Καθηγητή Alessandro Flora, Πρόεδρο της Τεχνικής Επιτροπής TC301 «Διατήρηση Ιστορικών Τοποθεσιών».

Στις 6 Μαΐου διοργανώθηκαν δύο εκδρομές. Μία προς τις εξάρσεις οφιδιανού της περιοχής Νυχιάς στο νησί, τις αποθέσεις μπεντονίτη κοντά στην περιοχή Αλυκές και το ορυχείο μπεντονίτη Αγγεριάς και το εργοστάσιο επεξεργασίας μπεντονίτη Βούδια. Οι συμμετέχοντες επωφελήθηκαν από τις παρουσιάσεις του προσωπικού της IMERYS που εξήγησαν επί τόπου τις λεπτομέρειες και τη σύντομη ιστορία του Μεταλλείου Αγγεριάς. Η άλλη εκδρομή είχε πολιτιστικό περιεχόμενο επιτρέποντας στους συμμετέχοντες να επισκεφθούν το Αρχαίο Θέατρο και τις Κατακόμβες καθώς και το εμβληματικό τοπίο του νησιού στην περιοχή Σαρακίνικο. Οι διοργανωτές είναι ευγνώμονες στον κ. Γάτσιο και τον κ. Σπυριδάκη της IMERYS που μας ξενάγησαν στο Μεταλλείο Αγγεριάς.

Τέλος, σημειώνεται πως:

- Υποβλήθηκαν περίπου 170 άρθρα, δόθηκαν 10 ειδικές διαλέξεις ειδικές και υπήρξαν περί τις 200 συμμετοχές.
- Τα άρθρα έχουν ελεύθερη πρόσβαση και είναι Scopus Indexed.
- Το συνέδριο έχει θετικό οικονομικό απολογισμό, ο οποίος οφείλεται καθαρά στους χορηγούς, οι οποίοι ενίσχυσαν οικονομικά το συνέδριο. Για τα συνέδρια αυτού του μεγέθους είναι πολύ σημαντικές οι χορηγίες.

3.2 9ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ – 14η ΑΘΗΝΑΪΚΗ ΔΙΑΛΕΞΗ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Από 4 έως 6 Οκτωβρίου 2023 διοργανώνεται στο Συνεδριακό Κέντρο της Πανεπιστημιούπολης Αρχαίου Ελαιώνα του ΠΑΔΑ, κεντρική και παράλληλη αίθουσα, το 9ο Πανελλήνιο Συνέδριο Γεωτεχνικής Μηχανικής. Το συνέδριο περιλαμβάνει:

- 120 Παρουσιάσεις Άρθρων με κρίση πλήρους κειμένου.
- 13 Ειδικές Ομιλίες
- 1 προσκεκλημένη Διάλεξη

- 14η Αθηναϊκή Διάλεξη Γεωτεχνικής Μηχανικής
- Αφιέρωμα στη συνεισφορά του Π. Μαρίνου
- Απονομή τιμητικών πλακετών
- 3 Χορηγούς
- 13 Εκθέτες

Στις κρίσεις των άρθρων συμμετείχαν 45 συνάδελφοι.

Η 14η Αθηναϊκή Διάλεξη Γεωτεχνικής Μηχανικής, είναι προγραμματισμένη για τις 4/10/2023, θα δοθεί από τον Paul W. Mayne, Emeritus Professor, Georgia Institute of Technology και έχει τίτλο "Geotechnical Site Characterization Using Shear Wave Velocity".

Η προσκεκλημένη διάλεξη είναι προγραμματισμένη για τις 4/10/2023, θα δοθεί από τον Jorge Zornberg, Professor, The University of Texas at Austin, Past-President, International Geosynthetic Society μετά από την κοινή πρόσκληση της ΕΕΕΕΓΜ και του Ελληνικού Συνδέσμου Γεωσυνθετικών και έχει τίτλο Geosynthetic Applications in Railways and Roadways.

3.3 13η ΑΘΗΝΑΪΚΗ ΔΙΑΛΕΞΗ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Στις 14 Σεπτεμβρίου 2022 διοργανώθηκε η 13η Αθηναϊκή Διάλεξη Γεωτεχνικής Μηχανικής, η οποία δόθηκε από τον Κυριαζή Πιπιλάκη, Ομότιμο Καθηγητή ΑΠΘ και Πρόεδρο της Ευρωπαϊκής Ένωσης Σεισμικής Μηχανικής (ΕΑΕΕ) με θέμα «Εξέλιξη των σεισμικών δράσεων σχεδιασμού στην Ελλάδα: Από τον χάρτη του 1955 στον προτεινόμενο νέο χάρτη σεισμικής επικινδυνότητας με νέους συντελεστές εδαφικής ενίσχυσης και νέα κατηγοριοποίηση των εδαφικών συνθηκών», στην Κεντρική Αίθουσα του Συνεδριακού Κέντρου της Πανεπιστημιούπολης Αρχαίου Ελαιώνα του ΠΑΔΑ.

Αποτέλεσε την πρώτη με φυσική παρουσία μετά την έναρξη της πανδημίας εκδήλωση της ΕΕΕΕΓΜ και προσήλθαν άνω των 60 ατόμων και την πρώτη διάλεξη της ΕΕΕΕΓΜ με ζωντανή αναμετάδοση. Σύμφωνα με την αναφορά των τεχνικών, πάνω από 60 άτομα συνδέθηκαν διαδικτυακά. Η διάλεξη είναι ήδη αναρτημένη στο κανάλι της ΕΕΕΕΓΜ στο youtube.

Αναβίωσε η «**Συζήτηση την επόμενη μέρα**» την Πέμπτη 15 Σεπτεμβρίου, 11:00πμ στο Ορυκτολογικό Μουσείο γαιο-ΟΡΑΜΑ, της Σχολής Μεταλλειολόγων Μηχανικών-Μεταλλουργών του ΕΜΠ, η 2η που έχει γίνει στο πλαίσιο του θεσμού. Στη συζήτηση ο ομιλητής απάντησε σε ερωτήσεις φοιτητών, ενώ συμμετείχαν μέλη από την ακαδημαϊκή και επιστημονική κοινότητα γεωτεχνικής μηχανικής.

3.4 ΗΜΕΡΙΔΑ ΓΕΩΤΕΧΝΙΚΗ ΜΗΧΑΝΙΚΗ ΚΑΙ ΣΧΕΔΙΑΣΜΟΣ ΟΔΟΣΤΡΩΜΑΤΩΝ

Την Τετάρτη 28 Σεπτεμβρίου 2022 διοργανώθηκε με αποκλειστικά φυσική παρουσία η Ημερίδα «Γεωτεχνική Μηχανική & Σχεδιασμός Οδοστρωμάτων», η οποία διήρκεσε από τις 10:00 έως τις 17:00, στην Κεντρική Αίθουσα του Συνεδριακού Κέντρου της Πανεπιστημιούπολης Αρχαίου Ελαιώνα του ΠΑΔΑ. Σκοπός της ημερίδας ήταν η παρουσίαση της διεπιφάνειας μεταξύ γεωτεχνικής μηχανικής και μηχανικής των οδοστρωμάτων και η καταγραφή της εμπειρίας που αποκτήθηκε από την επιστημονική κοινότητα στα έργα αυτοκινητοδρόμων και αεροδρομίων που υλοποιήθηκαν τα τελευταία χρόνια. Είχε 14 ομιλίες και 4 χορηγούς για την εκτύπωση των πρακτικών της Ημερίδας. Η ΕΕΕΕΓΜ παρείχε τη δυνατότητα στους παρευρισκόμενους μέσω QRcode επί της αίθουσας της εκδήλωσης και ειδικού συνδέσμου να ζητήσουν ψηφιακά τη βεβαίωση παρακολούθησης της Ημερίδας. Στον ίδιο σύνδεσμο υπήρχαν και δύο βασικά ερωτήματα αξιολόγησης.

Ζητήθηκαν και δόθηκαν 140 βεβαιώσεις παρακολούθησης, ενώ το σύνολο των καταγεγραμμένων ατόμων που παρακολούθησαν την ημερίδα είναι περίπου 160. Περίπου 50 άτομα συμπλήρωσαν το ερωτηματολόγιο ικανοποίησης οργάνωσης

και θεματολογίας. Στο γράφημα παρατίθενται τα αποτελέσματα της αξιολόγησής τους.

3.5 ΔΙΑΛΕΞΕΙΣ ΜΕ ΦΥΣΙΚΗ ΠΑΡΟΥΣΙΑ

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

8/2/2023 Arvin Farid

ELECTROMAGNETIC WAVES FOR GEOTECHNICAL / GEO-ENVIRONMENTAL APPLICATIONS – Αίθουσα Εκδηλώσεων ΤΕΕ (με ζωντανή αναμετάδοση) – Συνδιοργάνωση με Τομέα Γεωτεχνικής – ΕΜΠ

13/2/2020 Κωνσταντίνου Νικολάου

Έρευνες Υδρογονανθράκων στην Κύπρο και την Ανατολική Μεσόγειο και Γεωπολιτικές Προκλήσεις – Αίθουσα Εκδηλώσεων ΤΕΕ

3.6 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:

08/02/2023 Στέλλα Καραφαγκά

Εκτίμηση σεισμικής διακινδύνευσης κτιρίων συνεκτιμώντας αλληλεπίδραση εδάφους-κατασκευής και ρευστοποίηση. Εφαρμογή στον λιμένα της Θεσσαλονίκης

21/12/2022 Θάνος Πλατής

Καινοτόμες επί τόπου και εργαστηριακές δοκιμές Γεωτεχνικής Μηχανικής

09/11/2022 Γεώργιος Καμπάς

Κατασκευές από ρεγόλιθο: Η αρχή μιας νέας περιπέτειας στο διάστημα

23/03/2022 Ιωάννης Στεφανάκος

Μεγάλα και Μικρά Υδροηλεκτρικά Έργα (ΥΗΕ-ΜΥΗΕ). Ο ρόλος τους στο ενεργειακό σύστημα της χώρας

08/12/2021 Αχιλλέας Παπαδημητρίου

Πρόσφατες εξελίξεις στον αντισεισμικό σχεδιασμό υπογείων αγωγών σε ρευστοποιήσιμο έδαφος

14/07/2021 Πάνος Ντακούλας

Θερμικός λυγισμός υπόγειων χαλύβδινων αγωγών φυσικού αερίου: αλληλεπίδραση εδάφους – αγωγού

30/06/2021 Ιωάννης Μπαζιώτης

Μετεωρίτες: η σημασία τους για τη κοινωνία και η αναζήτησή τους στην Ανταρκτική

16/06/2021 Πρόδρομος Ψαρρόπουλος

Σεισμικοί Γεωκίνδυνοι, Αντισεισμικός Σχεδιασμός και Διαχείριση της Διακινδύνευσης Ενεργειακών Έργων στην ευρύτερη Περιοχή της Μεσογείου

4. ΕΚΔΗΛΩΣΕΙΣ ΥΠΟ ΤΗΝ ΑΙΓΙΔΑ/ΥΠΟΣΤΗΡΙΞΗ ΤΗΣ ΕΕΕΕΓΜ

Τα κάτωθι συνέδρια ήταν υπό την αιγίδα της ΕΕΕΕΓΜ:

- 23-24 Ιουνίου 2020: Conference Geotechnical Engineering Education 2020 (GEE2020), διαδικτυακά, με πρόεδρο της οργανωτικής επιτροπής την Μαρίνα Πανταζίδου.

- 5-7 Ιουλίου 2022: 3rd International Conference on Natural Hazards & Infrastructure (ICONHIC 2022) με πρόεδρο της οργανωτικής επιτροπής τον Γιώργο Γκαζέτα.

- 25-28 Ιουνίου 2023: 9ο Διεθνές Συνέδριο Περιβαλλοντικής Γεωτεχνικής (9th International Congress on Environmental Geotechnics), Χανιά, με πρόεδρο της οργανωτικής επιτροπής τον Δημήτρη Ζέκκο.

Όλα τα συνέδρια ήταν άκρως επιτυχημένα. Το μέλος της ΕΕ Μ. Πανταζίδου απηύθυνε χαιρετισμό στο 9ο Διεθνές Συνέδριο Περιβαλλοντικής Γεωτεχνικής εκ μέρους της ΕΕΕΕΓΜ. Το συνέδριο για την Εκπαίδευση στη Γεωτεχνική Μηχανική Geotechnical Engineering Education GEE 2020 ήταν αρχικά προγραμματισμένο να γίνει στις 24-25 Ιουνίου 2020 στο Μουσείο της Ακρόπολης.

Τελικά, έγινε αποκλειστικώς διαδικτυακά στις 23-25 Ιουνίου 2020, με τη συμμετοχή 117 συνέδρων από 28 χώρες. Το συνέδριο διοργανώθηκε από την Τεχνική Επιτροπή TC306 – Geo-Engineering Education, υπό την αιγίδα της Σχολής Πολιτικών Μηχανικών ΕΜΠ, της ΕΕΕΕΓΜ, της ISSMGE και του Δήμου Αθηναίων. Το τεχνικό πρόγραμμα ξεκίνησε με την 2η τιμητική ομιλία John Burland από τον καθηγητή Mark Jaksa, που μεταδόθηκε ως webinar της ISSMGE. Το πρόγραμμα περιλάμβανε ακόμα πέντε προσκεκλημένες ομιλίες (δύο ομιλητές ήταν γεωτεχνικοί μηχανικοί και τρεις από τον χώρο της εκπαίδευσης), δύο από τις οποίες μεταδόθηκαν επίσης ως webinar της ISSMGE. Τα πρακτικά του συνεδρίου είναι διαθέσιμα μέσω των ιστοσελίδων της ISSMGE και της ΕΕΕΕΓΜ. Οι θετικές εντυπώσεις των 53 συνέδρων που απάντησαν στο ερωτηματολόγιο αξιολόγησης αποτυπώθηκαν με σχόλια (π.χ. “enlightening and inspiring”, “good-spirited debates and discussions”) και με ποσοστά (π.χ. 98% έκριναν το πρόγραμμα ως εξαιρετικό ή πολύ καλό). Μετά το πέρας του συνεδρίου, η TC306 αποφάσισε να κρατήσει εφεξής το ίδιο όνομα για το συνέδριό της και να υποβάλει αίτημα να συμπεριληφθεί ο τίτλος των πρακτικών Geotechnical Engineering Education στη βάση δεδομένων Scopus. Με τη συμβολή της ΕΕΕΕΓΜ, του επίσημου εκδότη των πρακτικών του συνεδρίου, το αίτημα έγινε δεκτό μόλις προ μηνός, εξασφαλίζοντας μεγάλες πιθανότητες για τα πρακτικά των επόμενων συνεδρίων GEE να συμπεριλαμβάνονται στη βάση Scopus.

5. ΕΚΔΟΣΕΙΣ

Συνεχίζεται η μηνιαία έκδοση του ενημερωτικού δελτίου «ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ», την οποία επιμελείται ο πρώην Πρόεδρος και νυν Αντιπρόεδρος της ΕΕΕΕΓΜ Δρ Χρ. Τσατσανίφης. Μέσα στην περίοδο αναφοράς εκδόθηκαν δεκαεννέα (19) τεύχη (αρ. 133 έως 178). Σημειώνεται ότι, χάρη στις προσπάθειες του κ. Τσατσανίφου, από τον Ιανουάριο 2021 το Ενημερωτικό Δελτίο της ΕΕΕΕΓΜ έχει αριθμό ISSN (ISSN 2732-7248).

6. ΕΠΙΣΤΗΜΟΝΙΚΟ ΕΡΓΟ ΕΕΕΕΓΜ

6.1. ΕΛΛΗΝΙΚΗ ΜΕΤΑΦΡΑΣΗ ΤΟΥ ΠΟΛΥΛΕΞΙΚΟΥ ΤΗΣ ISSMGE

Ολοκληρώθηκε η Ελληνική μετάφραση του πολύγλωσσου λεξικού γεωτεχνικών όρων της ISSMGE, έγινε ο τελικός έλεγχος και απεστάλη στην ISSMGE και πλέον έχει αναρτηθεί στη σχετική ιστοσελίδα της ISSMGE (<https://www.issmge.org/lexicon>). Για τη μετάφραση του λεξικού συμμετείχαν αρχικά υπό την καθοδήγηση του Μ. Παχάκη, τα μέλη της ΕΕΕΕΓΜ Α. Γιαννακογιώργος, Ε. Γκέλη, Α. Γκόφας, Δ. Εγγλέζος, Γ. Μπελόκας, Γ. Παπαχαλαράμπους, Ε. Σακουμπέντα, Κ. Σαχπάκης και Χρ. Τσατσανίφης στο στάδιο απόδοσης των όρων και κατόπιν οι Α. Αναγνωστόπουλος, Π. Βέττας, Γ. Γκαζέτας, Ι. Ζευγώλης, Μ. Μπαρδάνης, Γ. Μπελόκας, Γ. Ντούλης, Β. Ξενάκης, Μ. Πανταζίδου, Μ. Παχάκης και Χρ. Τσατσανίφης στην τελική αξιολόγηση και ομογενοποίηση των μεταφρασμένων όρων.

6.2. ΣΧΟΛΙΑΣΜΟΣ ΚΕΙΜΕΝΩΝ 2ΗΣ ΓΕΝΙΑΣ ΕΥΡΩΚΩΔΙΚΩΝ

Η ΕΕΕΕΓΜ έχει μόνιμη εκπροσώπηση στην αρμόδια Τεχνική Επιτροπή ΕΛΟΤ/ΤΕ 67 «Ευρωκώδικες», αρχικά από τους κυρίους Γ. Μπελόκα (τακτικό μέλος) και Α. Αναγνωστόπουλο (αναπληρωματικό μέλος) και πλέον από τους κυρίους Γ. Μπε-

λόκα (τακτικό μέλος) και Χρ. Στρατάκος (αναπληρωματικό μέλος). Η ΕΕ θέλει να ευχαριστήσει τον Ανδρέα Αναγνωστόπουλο, Ομότιμο Καθηγητή για την πολυετή συνεισφορά στην ΤΕ και μέσω της ΕΕΕΕΓΜ.

Η ΕΕΕΕΓΜ μέσω της εκπροσώπησης στον ΕΛΟΤ συμμετέχει στον αιτιολογημένο σχολιασμό των κειμένων προς τη CEN. Η ΕΕ ευχαριστεί τα μέλη εθελοντές της οι οποίοι συνέδραμαν στη δημόσια κρίση των σχεδίων κειμένων της 2ης γενιάς των ΕΥΡΩΚΩΔΙΚΩΝ σε δύο στάδια. Στο πρώτο, το 2021, συμμετείχαν στον σχολιασμό 7 μέλη της ΕΕΕΕΓΜ (Αργύρης Αλεξανδρής, Παύλος Αστερίου, Γιώργος Γκαζέτας, Θωμάς Κωνσταντίνης, Χρήστος Στρατάκος, Κωνσταντίνος Τζιβάνος, Γιώργος Μπελόκας), ενώ στο δεύτερο στάδιο, τον Δεκέμβριο 2022, και τελικό για δημόσια διαβούλευση συμμετείχαν 7 μέλη της ΕΕΕΕΓΜ (Γιώργος Γκαζέτας, Δημήτρης Κούμουλος, Ανδρέας Μπενάρδος, Χρήστος Μπιλέρης, Μιχάλης Χικάρας, Σταύρος Τόλης και Γιώργος Μπελόκας).

7. ΔΙΕΘΝΗ ΒΡΑΒΕΙΑ, ΔΙΑΚΡΙΣΕΙΣ ΤΗΣ ISSMGE ΣΕ ΜΕΛΗ ΤΗΣ ΕΕΕΕΓΜ

Η Μ. Πανταζίδου Πρόεδρος της TC306, πρόεδρος της οργανωτικής επιτροπής του Conference Geotechnical Engineering Education 2020 (GEE2020), προτάθηκε από την ΕΕΕΕΓΜ στην TC 306 και επιλέχθηκε από την TC 306 να δώσει την 3η Διάλεξη John Burland.

8. ΕΚΠΡΟΣΩΠΗΣΗ ΣΤΗΝ ISRM

Ο Π. Νομικός εκπροσωπεί την ΕΕΕΕΓΜ στην ISRM.

9. ΔΙΕΚΔΙΚΗΣΕΙΣ ΔΙΕΘΝΩΝ ΣΥΝΕΔΡΙΩΝ

Η ΕΕΕΕΓΜ διεκδίκησε τη διοργάνωση του 12ου Συμποσίου Παρακολούθησης Πεδίου στη Γεωμηχανική (12th Symposium on Field Monitoring in Geomechanics). Κατά την ψηφοφορία των μελών της Τεχνικής Επιτροπής TC220 Field Monitoring της ISSMGE επιλέχθηκε η πρόταση των Ινδών συναδέλφων.

Η ΕΕΕΕΓΜ διεκδίκησε και κέρδισε τη διοργάνωση του 4ου Διεθνούς Συνεδρίου για τη Γεωτεχνική Μηχανική στη Συντήρηση Μνημείων και Ιστορικών Τοποθεσιών (4th International Conference on Geotechnical Engineering for the Preservation of Monuments and Historic Sites) το οποίο θα διοργανωθεί από την ΕΕΕΕΓΜ στην Αθήνα το 2026. Το συνέδριο τελεί υπό την ευθύνη της Τεχνικής Επιτροπής TC301 της Διεθνούς Ένωσης Εδαφομηχανικής και Γεωτεχνικής Μηχανικής (ISSMGE). Η προσπάθεια συντονίστηκε από τον αντιπρόεδρο της ΕΕΕΕΓΜ Χρ. Τσατσανίφο μαζί με ομάδα συναδέλφων και ο σχετικός φάκελος της διεκδίκησης συντάχθηκε από τα μέλη μας Χρ. Τσατσανίφο, Ρ. Κουρκουλή και Φ. Γελαγώτη. Ύστερα από απόφαση της ΕΕ πρόεδρος της οργανωτικής επιτροπής είναι ο Χρ. Τσατσανίφο.

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

Η ΕΕΕΕΓΜ έχει προφίλ στον ιστότοπο επαγγελματικής δικτύωσης LinkedIn με τον οποίο 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».

Μέχρι σήμερα υπάρχουν 4200 συνδεδεμένα με αυτό το προφίλ μέλη (ακριβέστερα προφίλ του ίδιου ιστότοπου) που είναι πολύ περισσότερα από τα ενεργά μέλη της ΕΕΕΕΓΜ. Η δημιουργία του προφίλ αυτού έχει επιτρέψει την ταχύτερη και ευρύτερη διάδοση των δραστηριοτήτων της ΕΕΕΕΓΜ πολύ πέραν των μελών της και της ελληνικής γεωτεχνικής κοινότητας και της ευρύτερης κοινότητας των μηχανικών στη χώρα με τις ανακοινώσεις για συνέδρια, διαλέξεις και διακρίσεις να γίνονται γνωστές από πολύ περισσότερους συναδέλφους και στην Ελλάδα και στο Εξωτερικό.

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.

Η ΕΕΕΕΓΜ έχει δημιουργήσει κανάλι στο youtube, το οποίο περιέχει 19 διαλέξεις, έχει περί τους 140 εγγεγραμμένους και οι διαλέξεις έχουν περί τις 2500 προβολές συνολικά. Ευχαριστούμε τον συνάδελφο και μέλος της ΕΕΕΕΓΜ Δημήτρη Τσούτσα, για την επεξεργασία και ανάρτηση των ομιλιών στο κανάλι.

Επίσης, η ΕΕΕΕΓΜ έχει επαφή με αντίστοιχες επιστημονικές εταιρείες στην περιοχή των Βαλκανίων, αποβλέποντας σε κοινές δράσεις.

11. ΑΠΩΛΕΙΣ

Από το 2019, η επιστημονική κοινότητα των Ελλήνων γεωτεχνικών έχασε πέντε εξέχοντα μέλη της:

- Τον Ομότιμο Καθηγητή του Εθνικού Μετσοβίου Πολυτεχνείου Παύλο Μαρίνο. Η ΕΕΕΕΓΜ αφιέρωσε το Τεύχος 158 / Δεκέμβριος 2021 του Ενημερωτικού Δελτίου στη μνήμη και το έργο του Παύλου Μαρίνου και διοργανώνει και τη σχετική ειδική συνεδρία στο 9ο Πανελλήνιο Συνέδριο Γεωτεχνικής Μηχανικής.
- Τον Ομότιμο Καθηγητή του Πανεπιστημίου Θεσσαλίας Σπύρο Κωστόπουλο.

Θα τους θυμόμαστε με ευγνωμοσύνη για όσα προσέφεραν στην επιστήμη μας και στην ΕΕΕΕΓΜ.

Αθήνα, 5 Οκτωβρίου 2023
Για την Εκτελεστική Επιτροπή

Ο Πρόεδρος Ο Γενικός Γραμματέας
Μ. Μπαρδάνης Γ. Μπελόκας

Θέμα 2^ο: ΟΙΚΟΝΟΜΙΚΟΣ ΑΠΟΛΟΓΙΣΜΟΣ

Ο Οικονομικός Απολογισμός συνοψίζεται στους πίνακες οι οποίοι συνοδεύουν την έκθεση της Εξελεγκτικής Επιτροπής. Στον πίνακα που ακολουθεί παρουσιάζονται οι αριθμοί των εγγεγραμμένων και των ταμειακών εν τάξει μελών, καθώς και συνοπτικά τα οικονομικά αποτελέσματα.

| ΕΤΟΣ | 2019 | | 2020 | | 2021 | | 2022 | |
|-----------------------------------|--------------|-------------------|--------------|-------------------|--------------|-------------------|--------------|-------------------|
| ΚΑΤΑΣΤΑΣΗ ΜΕΛΩΝ | Εγγεγραμμένα | Ταμειακώς Εντάξει | Εγγεγραμμένα | Ταμειακώς Εντάξει | Εγγεγραμμένα | Ταμειακώς Εντάξει | Εγγεγραμμένα | Ταμειακώς Εντάξει |
| Παλαιά Μέλη | 331 | 93 | 339 | 12 | 345 | 6 | 346 | 4 |
| Νέα Μέλη | 8 | 8 | 6 | 6 | 1 | 1 | 0 | 0 |
| Διεγραφέντα | - | - | - | - | - | - | 1 | - |
| Σύνολο μελών στο τέλος κάθε έτους | 339 | 101 | 345 | 18 | 345 | 7 | 347 | 4 |
| Εσοδα ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ | | 7,140 | | 905 | | 450 | | 300 |
| Εσοδα ΒΡΑΧΟΜΗΧΑΝΙΚΗΣ | | 1,920 | | 210 | | 90 | | 90 |
| Λοιπά έσοδα | 160.59 | | 120.57 | | 20.31 | | 0.00 | |
| Συνολικά ΕΣΟΔΑ | 9,220.59 | | 1,235.57 | | 560.31 | | 390.00 | |

| | | | | | | | | |
|-------------------|-----------|--|--------|--|----------|--|----------|--|
| ΣΥΝΟΛΙΚΕΣ ΔΑΠΑΝΕΣ | 11,221.04 | | 696.27 | | 3,925.91 | | 3,248.92 | |
|-------------------|-----------|--|--------|--|----------|--|----------|--|

Θέμα 3ο: ΕΚΘΕΣΗ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ

ΕΚΘΕΣΙΣ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ ΓΙΑ ΤΟ ΔΙΑΧΕΙΡΙΣΤΙΚΟ ΕΤΟΣ 2019

Οι υπογεγραμμένοι Ανάργυρος Αλεξανδράκης, Απόστολος Κοζομπόλης και Παύλος Τυρολόγος

Αποτελούντες την Εξελεγκτική Επιτροπή της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής συμφώνως προς την σχετική απόφαση της Γενικής Συνέλευσης της 7.11.2019 ελέγξαμε το βιβλίο εσόδων – εξόδων και τα λοιπά δικαιολογητικά της οικονομικής διαχείρισης της Ε.Ε.Ε.Γ.Μ κατά το έτος 2019 ήτοι από 1^{ης} Ιανουαρίου 2019 έως 31 Δεκεμβρίου 2019 η οποία έχει συνοπτικώς ως ακολούθως:

| | |
|--|----------------|
| Υπόλοιπον της 31 ^{ης} Δεκεμβρίου 2018 | Ευρώ 46.016,69 |
| Έσοδα από συνδρομές και εγγραφές | Ευρώ 9.220,00 |
| Τόκοι καταθέσεων έτους 2019 | Ευρώ 0,59 |
| Σύνολο εσόδων | Ευρώ 55.237,28 |
| Μείον έξοδα | Ευρώ 11.221,04 |
| Υπόλοιπον εις νέον | Ευρώ 44.016,24 |

Το ποσόν τούτο ευρίσκεται την 31.12.2019:

| | |
|--|----------------|
| 1. Εις τον υπ' αρ. 1140-102726-3 λογ/σμό Ταχυδρ. Ταμιευτηρίου | Ευρώ 34.790,25 |
| 2. Εις τον υπ' αρ. 104-002101-204280 λογ/σμό Ταμιευτηρίου Τραπέζης Alpha Bank | Ευρώ 351,41 |
| 3. Εις τον υπ' αρ. 104-00-2786019010 λογ/σμό Ταμιευτηρίου PLUS Τραπέζης Alpha Bank | Ευρώ 5.906,81 |
| 4. Εις το Ταμείον μετρητά | Ευρώ 2.967,77 |
| Σύνολον | Ευρώ 44.016,24 |

Παρατηρήσεις

Κατά τον έλεγχο διαπιστώσαμε, ότι το βιβλίο εσόδων – εξόδων και όλα τα υπόλοιπα δικαιολογητικά ευρίσκονται σε απόλυτο τάξη και αρμονία και σε πλήρη αντιστοιχία μεταξύ τους και με τον απολογισμό κατά το χρονικό διάστημα από 1 Ιανουαρίου 2019 μέχρι 31 Δεκεμβρίου 2019. Κατόπιν τούτου προτείνουμε την έγκριση του απολογισμού και την απαλλαγή από κάθε ευθύνη της Εκτελεστικής Επιτροπής και της Εξελεγκτικής Επιτροπής.

ΕΚΘΕΣΙΣ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ ΓΙΑ ΤΟ ΔΙΑΧΕΙΡΙΣΤΙΚΟ ΕΤΟΣ 2020

Οι υπογεγραμμένοι Ανάργυρος Αλεξανδράκης, Απόστολος Κοζομπόλης και Παύλος Τυρολόγος

Αποτελούντες την Εξελεγκτική Επιτροπή της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής συμφώνως προς την σχετική απόφαση της Γενικής Συνέλευσης της 7.11.2019 ελέγξαμε το βιβλίο εσόδων – εξόδων και τα λοιπά δικαιολογητικά της οικονομικής διαχείρισης της Ε.Ε.Ε.Γ.Μ κατά το έτος 2020 ήτοι από 1^{ης} Ιανουαρίου 2020 έως 31 Δεκεμβρίου 2020 η οποία έχει συνοπτικώς ως ακολούθως:

| | |
|--|----------------|
| Υπόλοιπον της 31 ^{ης} Δεκεμβρίου 2019 | Ευρώ 44.016,24 |
| Έσοδα από συνδρομές και εγγραφές | Ευρώ 1.235,00 |
| Τόκοι καταθέσεων έτους 2020 | Ευρώ 0,57 |
| Σύνολο εσόδων | Ευρώ 45.251,81 |
| Μείον έξοδα | Ευρώ 696,27 |
| Υπόλοιπον εις νέον | Ευρώ 44.555,54 |

Το ποσόν τούτο ευρίσκεται την 31.12.2021:

| | | | |
|----|---|-------------|------------------|
| 1. | Εις τον υπ' αρ. 1140-102726-3 λογ/σμό Ταχυδρ. Ταμιευτηρίου | Ευρώ | 34.790,25 |
| 2. | Εις τον υπ' αρ. 104-002101-204280 λογ/σμό Ταμιευτηρίου Τραπέζης Alpha Bank | Ευρώ | 351,41 |
| 3. | Εις τον υπ' αρ. 104-00-2786019010 λογ/σμό Ταμιευτηρίου PLUS Τραπέζης Alpha Bank | Ευρώ | 6.311,11 |
| 4. | Εις το Ταμείον μετρητά | Ευρώ | 3.102,77 |
| | Σύνολον | Ευρώ | 44.555,54 |

Παρατηρήσεις

Κατά τον έλεγχο διαπιστώσαμε, ότι το βιβλίο εσόδων – εξόδων και όλα τα υπόλοιπα δικαιολογητικά ευρίσκονται σε απόλυτο τάξη και αρμονία και σε πλήρη αντιστοιχία μεταξύ τους και με τον απολογισμό κατά το χρονικό διάστημα από 1 Ιανουαρίου 2020 μέχρι 31 Δεκεμβρίου 2020. Κατόπιν τούτου προτείνουμε την έγκριση του απολογισμού και την απαλλαγή από κάθε ευθύνη της Εκτελεστικής Επιτροπής και της Εξελεγκτικής Επιτροπής.

ΕΚΘΕΣΙΣ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ ΓΙΑ ΤΟ ΔΙΑΧΕΙΡΙΣΤΙΚΟ ΕΤΟΣ 2021

Οι υπογεγραμμένοι Ανάργυρος Αλεξανδρής, Απόστολος Κοζομπόλης και Παύλος Τυρολόγου

Αποτελούντες την Εξελεγκτική Επιτροπή της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής συμφώνως προς την σχετική απόφαση της Γενικής Συνέλευσης της 7.11.2019 ελέγξαμε το βιβλίο εσόδων – εξόδων και τα λοιπά δικαιολογητικά της οικονομικής διαχείρισης της Ε.Ε.Ε.Ε.Γ.Μ κατά το έτος 2021 ήτοι από 1^{ης} Ιανουαρίου 2021 έως 31 Δεκεμβρίου 2021 η οποία έχει συνοπτικώς ως ακολούθως:

| | |
|--|-----------------------|
| Υπόλοιπον της 31 ^{ης} Δεκεμβρίου 2020 | Ευρώ 44.016,24 |
| Έσοδα από συνδρομές και εγγραφές | Ευρώ 560,00 |
| Τόκοι καταθέσεων έτους 2021 | Ευρώ 0,31 |
| Σύνολο εσόδων | Ευρώ 45.115,89 |
| Μείον έξοδα | Ευρώ 3.925,91 |
| Υπόλοιπον εις νέον | Ευρώ 41.189,94 |

Το ποσόν τούτο ευρίσκεται την 31.12.2021:

| | | | |
|----|---|-------------|------------------|
| 1. | Εις τον υπ' αρ. 1140-102726-3 λογ/σμό Ταχυδρ. Ταμιευτηρίου | Ευρώ | 34.790,25 |
| 2. | Εις τον υπ' αρ. 104-002101-204280 λογ/σμό Ταμιευτηρίου Τραπέζης Alpha Bank | Ευρώ | 351,41 |
| 3. | Εις τον υπ' αρ. 104-00-2786019010 λογ/σμό Ταμιευτηρίου PLUS Τραπέζης Alpha Bank | Ευρώ | 2.940,51 |
| 4. | Εις το Ταμείον μετρητά | Ευρώ | 3.107,77 |
| | Σύνολον | Ευρώ | 41.189,94 |

Παρατηρήσεις

Κατά τον έλεγχο διαπιστώσαμε, ότι το βιβλίο εσόδων – εξόδων και όλα τα υπόλοιπα δικαιολογητικά ευρίσκονται σε απόλυτο

τάξη και αρμονία και σε πλήρη αντιστοιχία μεταξύ τους και με τον απολογισμό κατά το χρονικό διάστημα από 1 Ιανουαρίου 2021 μέχρι 31 Δεκεμβρίου 2021. Κατόπιν τούτου προτείνουμε την έγκριση του απολογισμού και την απαλλαγή από κάθε ευθύνη της Εκτελεστικής Επιτροπής και της Εξελεγκτικής Επιτροπής.

ΕΚΘΕΣΙΣ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ ΓΙΑ ΤΟ ΔΙΑΧΕΙΡΙΣΤΙΚΟ ΕΤΟΣ 2022

Οι υπογεγραμμένοι Ανάργυρος Αλεξανδρής, Απόστολος Κοζομπόλης και Παύλος Τυρολόγου

Αποτελούντες την Εξελεγκτική Επιτροπή της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής συμφώνως προς την σχετική απόφαση της Γενικής Συνέλευσης της 7.11.2019 ελέγξαμε το βιβλίο εσόδων – εξόδων και τα λοιπά δικαιολογητικά της οικονομικής διαχείρισης της Ε.Ε.Ε.Ε.Γ.Μ κατά το έτος 2022 ήτοι από 1^{ης} Ιανουαρίου 2022 έως 31 Δεκεμβρίου 2022 η οποία έχει συνοπτικώς ως ακολούθως:

| | |
|--|-----------------------|
| Υπόλοιπον της 31 ^{ης} Δεκεμβρίου 2021 | Ευρώ 41.189,94 |
| Έσοδα από συνδρομές και εγγραφές | Ευρώ 390,00 |
| Τόκοι καταθέσεων έτους 2022 | - |
| Σύνολο εσόδων | Ευρώ 41.579,94 |
| Μείον έξοδα | Ευρώ 3.248,32 |
| Υπόλοιπον εις νέον | Ευρώ 38.331,02 |

Το ποσόν τούτο ευρίσκεται την 31.12.2022:

| | | | |
|----|---|-------------|------------------|
| 1. | Εις τον υπ' αρ. 1140-102726-3 λογ/σμό Ταχυδρ. Ταμιευτηρίου | Ευρώ | 34.790,25 |
| 2. | Εις τον υπ' αρ. 104-002101-204280 λογ/σμό Ταμιευτηρίου Τραπέζης Alpha Bank | Ευρώ | 351,41 |
| 3. | Εις τον υπ' αρ. 104-00-2786019010 λογ/σμό Ταμιευτηρίου PLUS Τραπέζης Alpha Bank | Ευρώ | 81,59 |
| 4. | Εις το Ταμείον μετρητά | Ευρώ | 3.107,77 |
| | Σύνολον | Ευρώ | 38.331,02 |

Παρατηρήσεις

Κατά τον έλεγχο διαπιστώσαμε, ότι το βιβλίο εσόδων – εξόδων και όλα τα υπόλοιπα δικαιολογητικά ευρίσκονται σε απόλυτο τάξη και αρμονία και σε πλήρη αντιστοιχία μεταξύ τους και με τον απολογισμό κατά το χρονικό διάστημα από 1 Ιανουαρίου 2022 μέχρι 31 Δεκεμβρίου 2022. Κατόπιν τούτου προτείνουμε την έγκριση του απολογισμού και την απαλλαγή από κάθε ευθύνη της Εκτελεστικής Επιτροπής και της Εξελεγκτικής Επιτροπής.

Θέμα 4ο: ΨΗΦΟΦΟΡΙΑ ΓΙΑ ΠΡΟΤΑΣΕΙΣ ΑΛΛΑΓΗΣ ΚΑΤΑΣΤΑΤΙΚΟΥ

Ζητήθηκε από τους συμμετάσχοντες στην Γενική Συνέλευση να εξουσιοδοτηθεί η επόμενη ΕΕ για τα εξής:

1. Να τροποποιηθεί το καταστατικό ώστε να υπάρχει δυνατότητα για εγγραφής στα μέλη της ΕΕΕΕΓΜ εταιρειών ως εταίροι ή/και χορηγοί με συγκεκριμένη αυξημένη συνδρομή. Προτείνεται η ακόλουθη δομή, η οποία βασίζεται στο κατάστατικό της ΕΣΥΕ:

α. Εταίροι – Χορηγοί Εταιρείες ή Οργανισμοί του Δημοσίου. Ετήσια συνδρομή μεγαλύτερη ή ίση του 20 x Σ (όπου Σ – συνδρομή τακτικού μέλους). Κάθε εταίρος – χορηγός μπορεί να ορίζει, εφόσον το επιθυμεί, ένα μέγιστο αριθμό τριών (3) υπαλλήλων του, που θα εκπληρώνουν της προϋποθέσεις των τακτικών μελών, και οι οποίοι μπορούν να εκπροσωπούν το συγκεκριμένο εταίρο – χορηγό της ψηφοφορίας της ΕΕΕΕΓΜ.

Β. Απλοί Εταίροι Μικρές εταιρείες. Ετήσια συνδρομή μεγαλύτερη ή ίση του 4 x Σ. Δυνατότητα ορισμού της (1) εκπροσώπου, που θα εκπληρώνει της προϋποθέσεις των τακτικών μελών.

2. Να τροποποιηθεί η μορφή της ΕΕΕΕΓΜ με βιβλία εσόδων – εξόδων, ώστε να εκδίδει τιμολόγια. Της το παρόν μπορούμε να λαμβάνουμε μόνο συνδρομές και έκτακτες εισφορές.

3. Να τροποποιηθεί το καταστατικό ώστε η θητεία της Εκτελεστικής και της Εξελεγκτικής Επιτροπής να διαρκεί 4 χρόνια αντί για 3 χρόνια.

Η εξουσιοδότηση δόθηκε ομοφώνως.

ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ

| | |
|-------------------------|-----------|
| ΑΝΑΣΤΑΣΙΑΔΗΣ ΑΝΑΣΤΑΣΙΟΣ | 19 Ψήφους |
| ΖΕΥΓΩΛΗΣ ΙΩΑΝΝΗΣ | 31 Ψήφους |
| ΚΑΡΑΦΑΓΚΑ ΣΤΕΛΛΑ | 7 Ψήφους |
| ΚΛΗΜΗΣ ΝΙΚΟΛΑΟΣ | 37 Ψήφους |
| ΚΟΝΤΟΕ ΣΤΑΥΡΟΥΛΑ | 45 Ψήφους |
| ΛΑΜΑΡΗΣ ΧΑΡΗΣ | 14 Ψήφους |
| ΜΠΑΡΔΑΝΗΣ ΜΙΧΑΗΛ | 35 Ψήφους |
| ΜΠΕΛΟΚΑΣ ΓΕΩΡΓΙΟΣ | 30 Ψήφους |
| ΝΤΟΥΛΗΣ ΓΕΩΡΓΙΟΣ | 31 Ψήφους |
| ΠΑΝΤΑΖΙΔΟΥ ΜΑΡΙΝΑ | 19 Ψήφους |
| ΠΙΤΙΛΑΚΗΣ ΔΗΜΗΤΡΗΣ | 18 Ψήφους |
| ΣΤΡΑΤΑΚΟΣ ΧΡΗΣΤΟΣ | 17 Ψήφους |
| ΤΣΑΤΣΑΝΙΦΟΣ ΧΡΗΣΤΟΣ | 20 Ψήφους |
| ΨΑΡΡΟΠΟΥΛΟΣ ΠΡΟΔΡΟΜΟΣ | 9 Ψήφους |

ΕΞΕΛΕΓΚΤΙΚΗ ΕΠΙΤΡΟΠΗ

| | |
|--------------------|-----------|
| ΑΛΕΞΑΝΔΡΗΣ ΑΡΓΥΡΗΣ | 35 Ψήφους |
| ΚΕΡΑΜΙΔΑΣ ΕΥΤΥΧΗΣ | 24 Ψήφους |
| ΤΣΟΥΤΣΑΣ ΔΗΜΗΤΡΗΣ | 15 Ψήφους |
| ΤΥΡΟΛΟΓΟΥ ΠΑΥΛΟΣ | 12 Ψήφους |

Πλην των ανωτέρω δεν υπάρχει ουδέν άλλο να συμπληρωθεί και με τον τρόπο αυτό, ολοκληρώθηκε η καταμέτρηση στις 20:40 την 5^η Οκτωβρίου 2023.»

Θέμα 5ο: ΕΚΛΟΓΕΣ ΓΙΑ ΑΝΑΔΕΙΞΗ ΝΕΑΣ ΕΚΤΕΛΕΣΤΙΚΗΣ ΚΑΙ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ

Υπεβλήθησαν οι ακόλουθες υποψηφιότητες:

Για την ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ

ΑΝΑΣΤΑΣΙΑΔΗΣ ΑΝΑΣΤΑΣΙΟΣ
ΖΕΥΓΩΛΗΣ ΙΩΑΝΝΗΣ
ΚΑΡΑΦΑΓΚΑ ΣΤΕΛΛΑ
ΚΛΗΜΗΣ ΝΙΚΟΛΑΟΣ
ΚΟΝΤΟΕ ΣΤΑΥΡΟΥΛΑ
ΛΑΜΑΡΗΣ ΧΑΡΗΣ
ΜΠΑΡΔΑΝΗΣ ΜΙΧΑΗΛ
ΜΠΕΛΟΚΑΣ ΓΕΩΡΓΙΟΣ
ΝΤΟΥΛΗΣ ΓΕΩΡΓΙΟΣ
ΠΑΝΤΑΖΙΔΟΥ ΜΑΡΙΝΑ
ΠΙΤΙΛΑΚΗΣ ΔΗΜΗΤΡΗΣ
ΣΤΡΑΤΑΚΟΣ ΧΡΗΣΤΟΣ
ΤΣΑΤΣΑΝΙΦΟΣ ΧΡΗΣΤΟΣ
ΨΑΡΡΟΠΟΥΛΟΣ ΠΡΟΔΡΟΜΟΣ

Για την ΕΞΕΛΕΓΚΤΙΚΗ ΕΠΙΤΡΟΠΗ

ΑΛΕΞΑΝΔΡΗΣ ΑΡΓΥΡΗΣ
ΚΕΡΑΜΙΔΑΣ ΕΥΤΥΧΗΣ
ΤΣΟΥΤΣΑΣ ΔΗΜΗΤΡΗΣ
ΤΥΡΟΛΟΓΟΥ ΠΑΥΛΟΣ

Ως μέλη της Εφορευτικής Επιτροπής για την διεξαγωγή των Εκλογών εξελέγησαν οι Αλέξανδρος Θεοχάρης, Ηρώ Λεβέντη και Σοφία Σακελλαρίου.

Σύμφωνα με το πρακτικό της επιτροπής:

«Ψήφισαν 56 τακτικά ενήμερα μέλη διά ζώσης και 5 τακτικά ενήμερα μέλη με επιστολική ψήφο. Λήφθηκε ακόμα μια επιστολική ψήφος από μη ενήμερο μέλος η οποία κρίθηκε άκυρη.

Από τα συνολικά 61 (56 + 5) ψηφοδέλτια των τακτικών ενήμερων μελών που ψήφισαν βρέθηκαν 61 έγκυρα ψηφοδέλτια και 0 άκυρα ψηφοδέλτια.

Από την καταμέτρηση των σταυρών στις ψήφους προκύπτουν τα ακόλουθα αποτελέσματα:



Συγκρότηση Εκτελεστικής Επιτροπής σε Σώμα

Από τις αρχαιρεσίες που διεξήχθησαν κατά την Τακτική Γενική Συνέλευση της ΕΕΕΕΓΜ της 5ης Οκτωβρίου 2023 εξελέγησαν οι ακόλουθοι:

| | |
|-------------------------|-----------|
| ΚΟΝΤΟΕ ΣΤΑΥΡΟΥΛΑ | 45 Ψήφους |
| ΚΛΗΜΗΣ ΝΙΚΟΛΑΟΣ | 37 Ψήφους |
| ΜΠΑΡΔΑΝΗΣ ΜΙΧΑΗΛ | 35 Ψήφους |
| ΖΕΥΓΩΛΗΣ ΙΩΑΝΝΗΣ | 31 Ψήφους |
| ΝΤΟΥΛΗΣ ΓΕΩΡΓΙΟΣ | 31 Ψήφους |
| ΜΠΕΛΟΚΑΣ ΓΕΩΡΓΙΟΣ | 30 Ψήφους |
| ΤΣΑΤΣΑΝΙΦΟΣ ΧΡΗΣΤΟΣ | 20 Ψήφους |
| ΑΝΑΣΤΑΣΙΑΔΗΣ ΑΝΑΣΤΑΣΙΟΣ | 19 Ψήφους |
| ΠΑΝΤΑΖΙΔΟΥ ΜΑΡΙΝΑ | 19 Ψήφους |

Μετά από πρόσκληση του αρχαιότερου μέλους της ΕΕΕΕΓΜ, το οποίο εξελέγη για την Εκτελεστική Επιτροπή, Χρήστου Τσατσανίφου συνεδρίασε η επιτροπή την 25^η Οκτωβρίου.

Για την θέση του Προέδρου υπεβλήθησαν υποψηφιότητες από τον Νίκος Κλήμη και τον Μιχάλη Μπαρδάνη. Οι υποψήφιοι παρουσίασαν τις θέσεις τους και μετά από διαλογική συζήτηση και ψηφοφορία Πρόεδρος εξελέγη ο Μιχάλης Μπαρδάνης με 6 ψήφους έναντι 3 ψήφων του Νίκου Κλήμη.

Για τις λοιπές θέσεις της Εκτελεστικής Επιτροπής υπήρξε μόνο μία υποψηφιότητα για κάθε θέση και οι εκλογές έγιναν ομοφώνως.

Η νέα Εκτελεστική Επιτροπή συγκροτήθηκε σε σώμα ως ακολούθως:

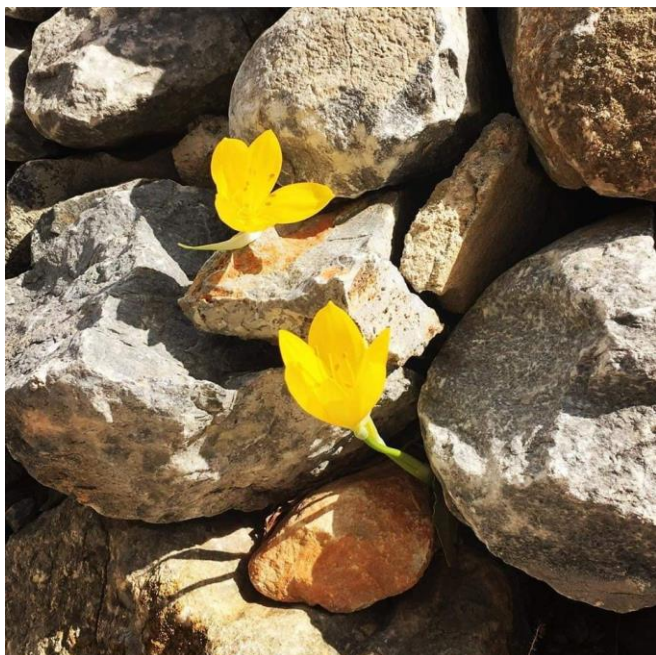
| | |
|--------------------|---|
| Πρόεδρος | : Μιχάλης Μπαρδάνης |
| Α΄ Αντιπρόεδρος | : Σταυρούλα Κοντοέ |
| Β΄ Αντιπρόεδρος | : Νίκος Κλήμης |
| Γενικός Γραμματέας | : Γιώργος Μπελόκας |
| Ταμίας | : Γιάννης Ζευγώλης |
| Έφορος | : Τάσος Αναστασιάδης |
| Μέλη | : Γιώργος Ντούλης Μαρίνα Πανταζίδου Χρήστος Τσατσανίφος |

Με βάση τα αποτελέσματα των εκλογών αναπληρωματικά μέλη εξελέγησαν οι:

| | |
|-----------------------|-----------|
| ΠΙΤΙΛΑΚΗΣ ΔΗΜΗΤΡΗΣ | 18 Ψήφους |
| ΣΤΡΑΤΑΚΟΣ ΧΡΗΣΤΟΣ | 17 Ψήφους |
| ΛΑΜΑΡΗΣ ΧΑΡΗΣ | 14 Ψήφους |
| ΨΑΡΡΟΠΟΥΛΟΣ ΠΡΟΔΡΟΜΟΣ | 9 Ψήφους |

Εγώ και ο εκατοστός πιθήκος...

Πέτρος Τζεφέρης



Σχεδόν πάντα, οι φίλοι και γνωστοί με ρωτούν *“και γιατί ταλαιπωρείσαι βρε παιδί μου με τα γραψίματα και τις ιστοσελίδες; δεν σου φτάνουν όλα όσα έχεις να ασχολείσαι καθημερινά; τι βγάζεις από αυτό, τί κερδίζεις;”*

Θα απαντήσω λοιπόν εμμέσως πλην σαφώς.

Το 1952, ή καλύτερα ανάμεσα στο 1952 και το 1958, οι επιστήμονες εκτέλεσαν ένα πρωτοποριακό για την εποχή πείραμα στο νησί Koshima της Ιαπωνίας. Σύμφωνα με το βιβλίο του Ken Keyes **“Ο εκατοστός πιθήκος”**, οι επιστήμονες παρακολουθώντας την συμπεριφορά πιθήκων που ζούσαν εκεί δοκίμασαν να τους ταΐσουν με γλυκοπατάτες πασαλισμένες με άμμο και λάσπη. Οι γλυκοπατάτες άρεσαν στους πιθήκους αλλά τους δυσάρεστούσε η βρωμιά της λάσπης. Όταν μια μικρή πιθήκινα ανακάλυψε πως μπορούσε να πλένει τις γλυκοπατάτες στο κοντινό ποταμάκι πριν τις φάει, έδειξε το τέχνασμα αυτό στους συντρόφους της και σιγά σιγά η “καινοτομία” υιοθετήθηκε από αρκετούς πιθήκους, όχι όμως από όλους.

Φανταστείτε την έκπληξη των επιστημόνων, όταν παρατήρησαν ότι, όταν ένας συγκεκριμένος αριθμός πιθήκων που υιοθέτησαν την καινοτομία ξεπεράστηκε **κατά έναν ακόμη πιθήκο**, τότε αυτόματα όλοι οι πιθήκοι άρχισαν να πλένουν τις πατάτες τους. Μόλις λοιπόν και ο πιθήκος αυτός, ο έστω εκατοστός πιθήκος, έμαθε πώς να ξεπλένει τη γλυκοπατάτα του προτού τη φάει, τότε συνέβη ένα μεγάλο **άλμα συνείδησης**. [Hundredth monkey effect](#)

Μάλιστα, τα επόμενα χρόνια, η καινοτομία επεκτάθηκε και σε άλλα νησιά και υιοθετήθηκε και από άλλες κατηγορίες πιθήκων. Ο οριακός αυτός αριθμός των πιθήκων που, όταν ξεπεράστηκε, όλα άλλαξαν ακαριαία, ονομάστηκε **κρίσιμη μάζα**.

Αυτό το πείραμα, αν κανείς το δει θετικά (διότι υπάρχει και η [αρνητική πλευρά του](#)) προσθέτει κουράγιο σε καθένα από εμάς που δίνει το μοναχικό αγώνα στη ζωή. Αν καθένας που ανακαλύπτει κάτι νέο ή απλά κατέχει μια συγκεκριμένη γνώση, επιλέγει να την διαδίδει προς τα έξω, αυτή η γνώση δεν μένει στον κύκλο των ολίγων. Όταν μάλιστα αρχί-

ζει να αυξάνει ο αριθμός των ανθρώπων που γνωρίζουν και δημιουργηθεί ένα κρίσιμο πλήθος, τότε δημιουργείται μία δύναμη και η γνώση των λίγων μετατρέπεται σε γνώση για όλους. Και τότε γεννιέται μια ελπίδα...

Πιστεύω ότι ο άνθρωπος δεν θα πρέπει να απεμπολεί αυτήν την ελπίδα. **Την ελπίδα να είναι αυτός ο κρίσιμος 100ος**, η «ακαριαία θρυαλλίδα» που θα πυροδοτήσει μια γενικότερη αλλαγή στην κοινωνία των ανθρώπων. Κι ας μην είναι αυτός που ανακαλύπτει την “καινοτομία”. **Κι ας είναι αυτός που απλώς θα συμπληρώσει την κρίσιμη μάζα...**

Ίσως μάλιστα κάποτε να καταφέρουμε να περάσουμε από την ατομική συνείδηση του απομονωτισμού και του φόβου και να κάνουμε συνειδησιακά άλματα προς μία πανανθρώπινη συνείδηση που δεν θα αφορά μόνο τις ...γλυκοπατάτες που καθα-ρίζουμε αλλά θα αφορά περισσότερο ουσιαστικά πράγματα: **τη βιωσιμότητα, την βιώσιμη ανάπτυξη, τον αξιοβίωτο βίο. Την ειρήνη και την ανιδιοτέλεια.** Άλματα που θα υπερβαίνουν τον σημερινό πολιτισμό μας του εγωιστικού γονιδίου, της ατομικότητας και του ανταγωνισμού...

Όπως έχω γράψει πολλές φορές, **τα πλανητικά προβλήματα, απαιτούν και πλανητικές λύσεις αλλά και εναύσματα και πολιτικές που μπορούν να εξαπλωθούν επίσης πλανητικά.** Η έννοια της βιωσιμότητας θα πρέπει να περάσει οριζόντια και στους πολίτες. Αν η «θρυαλλίδα» της λύσης προκύψει μέσα από την κεντρική πολιτική σκηνή ή από τα ΜΜΕ ή από την «ηράσινη επιχειρηματικότητα» ή από το «πέλαγος» των κοινοπραξιών των ιντερνετικών ΜΚΟ για το περιβάλλον και την άμεση ηλεκτρονική δημοκρατία που προτείνουν ορισμένοι, **τελικά δεν έχει ιδιαίτερη σημασία.**

Αρκεί ο πολίτης να βγει κερδισμένος. Πάντως, η λύση φαίνεται να περνάει μέσα από το διαδίκτυο το οποίο ως το μόνο απόλυτα πλανητικό επικοινωνιακό εργαλείο που δεν χειραγωγείται (τουλάχιστον εύκολα), μπορεί να «αθροίζει» αποτελεσματικά τις προσπάθειες είτε ατομικές είτε συλλογικές, είτε «αθώες» είτε «ένοχες», σε έναν κοινό σκοπό: την αφύπνιση του κόσμου.

Να γιατί “ταλαιπωρούμαι” λοιπόν...

(ΕΛΛΗΝΙΚΟΣ ΟΡΥΚΤΟΣ ΠΛΟΥΤΟΣ, 30 Οκτωβρίου 2012, https://www.oryktosploutos.net/2012/10/blog-post_30-18)

Ο εκατοστός πιθήκος!

Αν καθένας που ανακαλύπτει κάτι νέο ή απλά κατέχει μια συγκεκριμένη γνώση, επιλέγει να τη διαδίδει προς τα έξω, αυτή η γνώση δεν μένει στον κύκλο των ολίγων.

Την ακούσαμε, την εμπεδώσαμε, τη χαρήκαμε. Αισθανθήκαμε την ευεργετική επίδραση όλων των παροικούντων στην «άλλη Ελλάδα», εκείνων που με τη στάση ζωής τους αναδεικνύουν το αισιόδοξο και δημιουργικό πρόσωπο του τόπου μας. Νιώσαμε μια ελπίδα, κόντρα στο κλίμα της απαξίωσης, της μιζερίας και της διαφθοράς. Κόντρα στον τηλεοπτικό και κάθε είδους φαρισαϊσμό.

Τώρα ήρθε η ώρα να την αμφισβητήσουμε... Μήπως δεν υπάρχει, μήπως πρόκειται για μια υπερβολή, ένα «ασαφές, μη μετρήσιμο μόρφωμα», ένα εφεύρημα, εφόσον -όπως ισχυρίζονται αρκετοί- “is nowhere to be seen”; Ακριβώς επειδή, όσοι την απαρτίζουν, είναι «τιποτένια λίγιοι», είναι ταλαιπωρα «μιασματα» αλλά κυρίως επειδή αποτελούν θλιβερή και «στατιστικά μη σημαντική» μειοψηφία, ανίκανη να συντονιστεί, να επηρεάσει κατ’ ουσίαν τα κοινωνικά δρώμενα και τελικά να σώσει τη χώρα από τη χρεοκοπία και την κατακράυα των αξιών. Αν υπήρχε η καταλυτική επίδραση της «άλλης Ελλάδας» όλα αυτά τα χρόνια, οι αξίες του τόπου μας θα ήταν άλλες και η κοινωνική συνοχή θα ήταν τελείως διαφορετική. Δεν θα επικρατούσε παντού η αμορφωσιά, η λαμογιά, η παντελής απουσία του τεκμηριωμένου λόγου, του πολιτισμού.

Αλήθεια, έχετε ακούσει την ιστορία ή καλύτερα το «πείραμα» με τον εκατοστό πιθήκο; Δεν θα την επαναλάβω, εύκολα τη βρίσκει κανείς (Ken Keyes: «Ο εκατοστός πιθήκος»). Οι πιθήκοι λοιπόν, μπορεί να έμαθαν να πλένουν τις γλυκοπατάτες τους στο κοντινό ποταμάκι πριν τις φάνε, κι αυτό ήταν μια σημαντική καινοτομία, εντούτοις, αυτή δεν διαδόθηκε αυτόματα σε όλους τους πιθήκους. Χρειάστηκε να ξεπεραστεί ένας οριακός αριθμός πιθήκων («κρίσιμη μάζα») για να γίνει αυτό το σημαντικό άλμα συνείδησης, να συντελεστεί το Hundredth monkey effect.

Αυτό το πείραμα, ακόμη κι αν αποτελεί εφεύρημα κι όχι πραγματικότητα, απαντάει στο ερώτημα του «μύθου» της άλλης Ελλάδας. Η άλλη Ελλάδα δεν είναι μύθος, απλά αργεί ακόμη να λάβει ουσιαστικό μέγεθος... Λείπει ο «εκατοστός πιθήκος». Και φυσικά ο αριθμός 100 είναι φανταστικός, μπορεί να χρειαστούν χιλιάδες και ακόμη πολλά χρόνια για να επιτευχθεί το άλμα αυτό... «Θέλει σωστοί χιλιάδες να 'ναι στους τροχούς» για να θυμηθούμε τον αείμνηστο Μ. Ρασούλη («Μπορεί να αλλάξει, Κεράλ»).

Η ιστορία αυτή, αν κανείς τη δει από τη θετική πλευρά, προσθέτει κουράγιο σε καθέναν από εμάς που δίνει το μοναχικό αγώνα στη ζωή, έστω σαν δημιουργική μειοψηφία. Αν καθένας που ανακαλύπτει κάτι νέο ή απλά κατέχει μια συγκεκριμένη γνώση, επιλέγει να τη διαδίδει προς τα έξω, αυτή η γνώση δεν μένει στον κύκλο των ολίγων. Όταν μάλιστα αρχίζει να αυξάνει ο αριθμός των ανθρώπων που γνωρίζουν και δημιουργηθεί ένα κρίσιμο πλήθος, τότε δημιουργείται μία δύ-ναμη και η γνώση των λίγων μετατρέπεται σε γνώση για ό-λους. Και τότε γεννιέται μια ελπίδα...

Πιστεύω ότι ο άνθρωπος δεν θα πρέπει να απεμπολεί αυτήν την ελπίδα. Την ελπίδα να είναι αυτός ο κρίσιμος 100ός, η «ακαριαία θρυαλλίδα» που θα πυροδοτήσει μια γενικότερη αλλαγή στην κοινωνία των ανθρώπων. Κι ας μην είναι αυτός που ανακαλύπτει την «καινοτομία». Κι ας είναι αυτός που απλώς θα συμπληρώσει την κρίσιμη μάζα...

Ίσως μάλιστα κάποτε να καταφέρουμε να περάσουμε από την ατομική συνείδηση του απομονωτισμού και του φόβου και να κάνουμε συνειδησιακά άλματα προς μία πανανθρώπινη συνείδηση που δεν θα αφορά μόνο τις... γλυκοπατάτες που καθαρίζουμε αλλά θα αφορά περισσότερο ουσιαστικά πράγματα: τη βιωσιμότητα, τη βιώσιμη ανάπτυξη, τον αξιοβίωτο βίο. Την ειρήνη και την ανιδιοτέλεια. Άλματα που θα υπερβαίνουν τον σημερινό πολιτισμό μας του εγωιστικού γονιδίου, της ατομικότητας και του ανταγωνισμού...

Τα πλανητικά προβλήματα, απαιτούν και πλανητικές λύσεις αλλά και εναύσματα και πολιτικές που μπορούν να εξαπλωθούν επίσης πλανητικά. Απαιτείται και χρόνος και κόπος, ειδικά όταν πρόκειται να δημιουργήσεις από το τίποτε ή να δώσεις λύσεις σε αρνητικά κατεστημένα. Πάντως, η λύση φαίνεται να περνάει μέσα από το διαδίκτυο και όχι την τηλεόραση που είναι απολύτως χειραγωγημένη. Το διαδίκτυο, είναι το μόνο απόλυτα πλανητικό επικοινωνιακό εργαλείο που δεν χειραγωγείται (τουλάχιστον εύκολα), το οποίο μπορεί να «αθροίζει» αποτελεσματικά τις προσπάθειες είτε ατομικές είτε συλλογικές, σε έναν κοινό σκοπό: την αφύπνιση του κόσμου.

Και κάποτε -δεν ξέρω πότε- είναι σίγουρο, κάποιος «πίθήκος» της άλλης Ελλάδας που θα ξεπεταχτεί, θα είναι ο «εκατοστός», που με την καταλυτική του δράση θα φέρει την άνοιξη...

*Ο Πέτρος Τζεφέρης είναι δρ. Μηχ. Μεταλλείων και Προϊστάμενος της Διεύθυνσης Πολιτικής Ορυκτών Πρώτων Υλών ΥΠΕΚΑ. Επίσης, ιδιοκτήτης και διαχειριστής των ιστοσελίδων: www.oryktosploutos.net και www.elladitsamas.blogspot.com.

(Πέτρος Τζεφέρης / Protagon, 9 Οκτωβρίου 2013,

<https://www.protagon.gr/apopseis/ideas/o-ekatostos-pithikos-28277000000>)

The Vajont landslide disaster

Dave Petley

Today is the 60th anniversary of the dreadful Vajont landslide disaster, in which 2,500 people died. My original blog post about the chronology of events is here: -

The Vaiont (Vajont) landslide of 1963

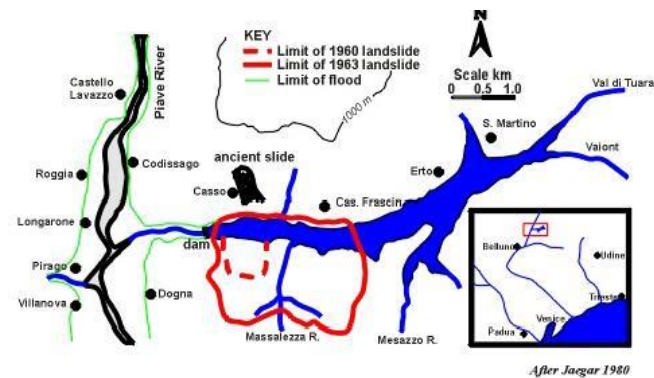
For some 12 or so years I have maintained a set of notes on the amazing Vajont (sometimes spelt Vaiont) landslide of N. Italy. This is the most deadly landslide in Europe in recorded history. For a while I have been meaning to move the notes over to here – today I have finally got around to it, so here they are:



Introduction

The Vajont reservoir disaster is a classic example of the consequences of the failure of engineers and geologists to understand the nature of the problem that they were trying to deal with. During the filling of the reservoir a block of approximately 270 million cubic metres detached from one wall and slid into the lake at velocities of up to 30 m/sec (approx. 110 km/h). As a result a wave over topped the dam by 250 m and swept onto the valley below, with the loss of about 2500 lives. Remarkably the dam remained unbroken by the flood.

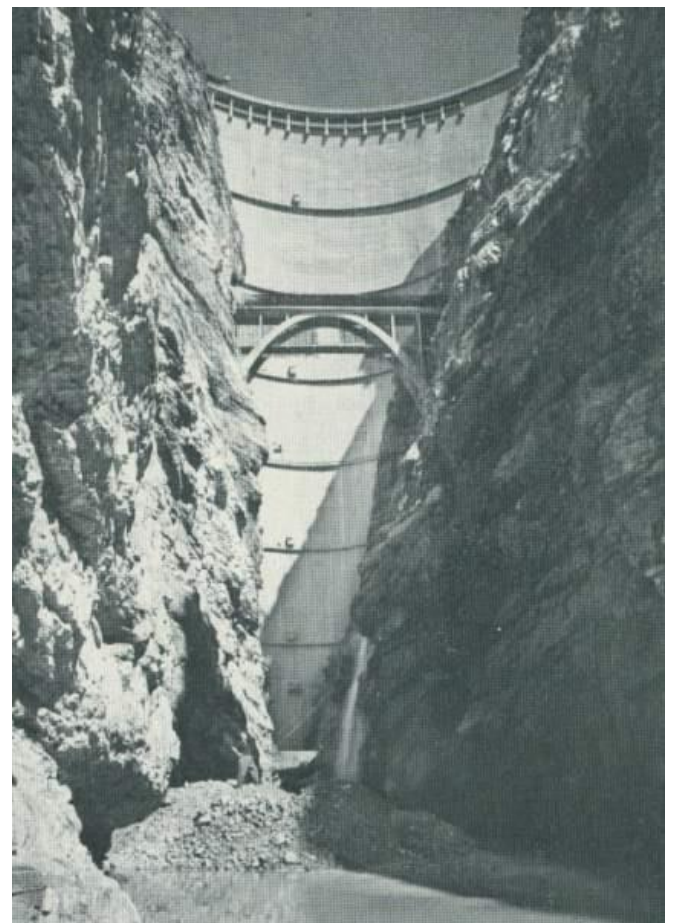
Location and background



Vajont is located in the south-eastern part of the Dolomite Region of the Italian Alps, about 100 km north of Venice. It

was built as a part of the on-going, post-war development of Italy in order to provide HEP for the rapidly-expanding northern cities of Milan, Turin and Modena. Whilst a proposal to site a dam at this location was made in the 1920's, excavation of the site began in 1956 and the dam was completed in 1960. The completed doubly curved arch dam was, at 265.5 metres above the valley floor, the worlds highest thin arch dam. The chord of the dam was 160 m, and the volume of impounded water was 115 million cubic metres.

The dam was built across the Vajont Valley, a deep, narrow gorge. The geological setting of the valley was fully understood. In this area, the mountains tend to be characterised by massive, near-vertical cliffs formed in the Jurassic Dogger formation and underlying Triassic formations. The local valleys tend to be associated with outcrops of the weaker formations, particularly the Upper and Lower Cretaceous and Tertiary units, which contain more clays and are more thinly bedded. Thus the generalised geological structure is of a syncline cut by the valley. The syncline is based in middle Jurassic limestone, overlain with successive layers of upper Jurassic limestone with clay and Cretaceous limestones.



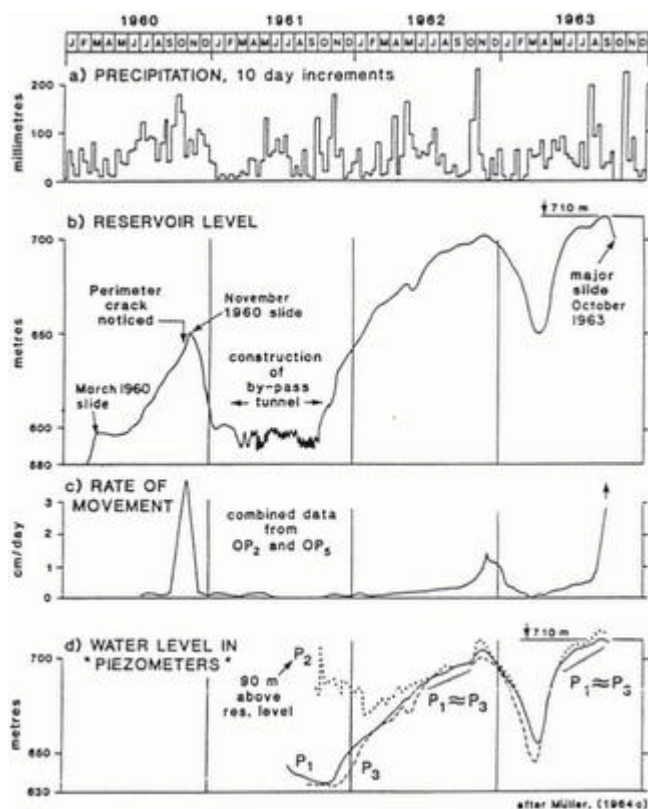
Order of events

The order of events should be examined in conjunction with this diagram:

1. Prior to the Completion of the Dam

It appears that during the construction of the dam the chief engineer was concerned about the stability of the left bank of the dam, and a number of reports were compiled on this during 1958 and 1959, which identified a possible prehistoric slide on the right bank. Whilst there was considerable discussion of the stability of the valley walls in view of the inclined synclinal form of the strata and the possibility of old slides in

this area, it was concluded that deep-seated landslides were extremely unlikely as (see Muller 1964 for a review of this):



- areas of weakness were not identified in the three test borings;
- it was assumed that any shear plane would have a 'chair-like' form that would exert a 'braking effect';
- seismic analyses had suggested that the banks consisted of very firm in-situ rock with a high modulus of elasticity.

Smaller slides in the looser surface layers were considered to be likely, although volumes and velocities of movement were expected to be low.

2. During the First Filling of the Reservoir

Filling was initiated in February 1960, before final completion of the dam (which occurred in September 1960). By March 1960 the level of the reservoir had reached 130 m above the level of the river, when the first small detachment occurred. Continued filling of the reservoir occurred whilst monitoring of the movements in the banks was undertaken. In October 1960, when the depth of the reservoir had reached 170 metres, a rapid increase in the rate of displacement to approximately 3.5 cm/day was observed. At the same time a huge joint of 2 km length opened up, defining an area about 1700 m long and 1000 m wide, suggesting that a very large landslide had been mobilised. This is the crack:



On 4th November, with the depth of the reservoir at 180 m, a large failure occurred when 700,000 cubic metres of material slid into the lake in about ten minutes. As a result the level of the reservoir was gently dropped back to 135 m. At this point movement reduced to close to 1 mm/day. This is the 1960 failure:



It was realised by the designers of the dam that the large mass of the left bank was inherently unstable. However Muller (1964) stated that:

'It appeared hopeless to arrest the slide artificially, because all means that would have had to be applied were beyond human bounds. It was also impossible to either seal the surface of the area, to shift the weight or to cement the rock by means of injections. On the other hand the possibility of accelerating the sliding movement in order to let the entire mass to slide down all at once had to be excluded. The danger arising for the formation upstream of the slide by an uncontrollable level of the storage lake would have been too great.'

Thus it was decided that an attempt could be made to gain control of the sliding mass by varying the level of water in the reservoir whilst controlling the joint water thrust within

the rock mass by means of drainage tunnels. It was realised that this could lead to the blockage of that section of the reservoir by the landslide mass. However the volume of water in the unblocked (upstream) section would still be sufficient to allow the generation of electricity. Hence a bypass tunnel was constructed on the opposite (right) bank such that if the reservoir was divided into two sections the level of the lake could still be controlled.

It was assumed that by elevating the level of the reservoir in a careful manner movement of the large landslide mass could be initiated. The rate of movement could be controlled by altering the level of the lake. It was realised that a final sudden movement might occur, and it was calculated that, so long as the movement did not exceed a rate that would lead to filling of the reservoir by the landslide in ten minutes or less, over-topping of the dam would be avoided.

3. First Draw-Down of the Reservoir

Creep had been initiated by the initial filling of the reservoir. As the level was subsequently drawn down, rates of movement decreased from a maximum of about 8 cm/day to 3 mm/day at a level of 185 m and less than 1 mm/day at 135 m. By this time the main landslide mass had moved an average of about 1 m.

4. Second Filling of the Reservoir

From the beginning of October 1961 through to early February 1962 the water level was raised to 185 m, followed by a phase of slow impoundment such that in November 1962 the level had reached 235 m. During the early part of this phase velocities did not substantially increase, but by the end of the phase velocities had increased to 1.2 cm/day.

5. Second Draw-Down of the Reservoir

In November 1962 a second lowering of the level was slowly undertaken, with the water depth decreasing to 185 m after four months. Initially displacements remained high but in December they began to reduce and, by early April when the water height had reached 185 m, the rate was effectively zero. The experiences gained from the second phase of filling and the subsequent draw-down confirmed to the engineers that control of the landslide was possible by altering the level of the reservoir. In consequence a third filling of the reservoir was undertaken.

6. Third Filling of the Reservoir

Between April and May 1963 the reservoir level was rapidly increased to 231 m. Slight increases in velocity were noted, but rates never exceeded 0.3 cm/day. During June the level was increased to 237 m and the rate of displacement increased to 0.4 cm/day. In mid July the level reached 240 m and some of the control points indicated small increases in displacement to 0.5 cm/day. The level was maintained through to mid-August, but during this time velocities increased to 0.8 cm/day. In the latter part of August the level was increased once more such that by early September the depth of water was 245 m. In some parts of the slide velocities increased to as much as 3.5 cm/day.

7. Third Drawing Down of the Reservoir

In late September the water level was slowly dropped to bring the rates of creep back under control. By 9th October a depth of 235 m was reached. However velocities of movement continued to slowly increase, and rates of up to 20 cm/day were recorded.

8. Catastrophic Failure

At 22:38 GMT on 9th October 1963 catastrophic failure of the landslide occurred on the slope shown below.



Before failure



After failure

The entire mass slid approximately 500 m northwards at up to 30 m/sec. The mass completely blocked the gorge to a depth of up to 400m, and it travelled up to 140 m up the opposite bank. Movement of the landslide mass ceased after a maximum of 45 sec. At the time the reservoir contained 115 million cubic metres of water. A wave of water was pushed up the opposite bank and destroyed the village of Casso, 260 m above lake level before over-topping the dam by up to 245 m. The water, estimated to have had a volume of about 30 million cubic metres, then fell more than 500 m onto the villages of Longarone, Pirago, Villanova, Rivalta and Fae, totally decimating them. A total 2500 lives were lost. The image below shows the location of these villages after the flood. The valley floor, on which the villages were located, has been wiped clean by the water. The flood wave came down the Vajont valley, which can be seen in the upper right of the image:



However the dam was not destroyed and is still standing today. The by-pass tunnel is used for the generation of HEP.

Causes of the landslide

Since the catastrophic failure, a huge range of work has been undertaken on the causes of the failure. Initially there was a large amount of speculation about the location of the sliding surface, but more recent studies have confirmed that it was located in thin (5 – 15 cm) clay layers in the limestone. It is claimed by some that as such it represents a reactivation of an old landslide (Hendron and Patten, 1985; Pasuto and Soldati, 1991), whilst others claim that it was a first-time movement (Skempton, 1966; Petley, 1996). It is likely that increasing the level of the reservoir drove up pore pressures in the clay layers, reducing the effective normal strength and hence the shear resistance. Resistance to movement was created by the chair-like form of the shear surface. Dropping the level of the reservoir induced hydraulic pressures that increased the stresses as water in the jointed limestone tried to drain. It has been estimated that the total thrust from this effect was 2 – 4 million tonnes (!?) (Muller, 1964). Failure occurred in a brittle manner, inducing catastrophic loss of strength. The speed of movement is probably the result of frictional heating of the pore water in the clay layers (Voight and Faust, 1982, 1992).

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Innovative monitoring can improve design, says Cambridge University's Robert Mair



Robert Mair

Fiber optic sensor monitoring has "enormous applicability" for performance-based design improvements, University of Cambridge emeritus professor Robert Mair told delegates at GE's Smart Geotechnics conference.

Delivering the keynote speech at the event on 5 October, Robert Mair highlighted the importance of monitoring in assessing the ground's response before, during and after engineering activities – and how this can lead to design improvements.

"Unless we actually measure and understand, we can't really improve the way that we design things," Mair told delegates.

One of the most innovative monitoring techniques currently in use is fibre optic sensing, said Mair. This uses optical sensors based on fibre devices that can measure continuous strain gauge over hundreds of metres.

Mair, who is also the founding head of the Cambridge based Centre for Smart Infrastructure and Construction, gave examples of how this monitoring technique has a wide range of geotechnical applications on structures such as shafts, tunnels, and piles.

Shafts

Fibre optic sensing has been successfully used on one of the main shafts of Thames Water's Lee tunnel project at Abbey Mills in London, and on the Limmo Peninsula shaft in east London constructed for Crossrail.

Both were circular shafts, and both were constructed with diaphragm walls in different ground conditions. While the Limmo Peninsula shaft was predominantly in London Clay, the Abbey Mills shaft was mostly in Thanet Sand and chalk.

Fibre optic sensing technology was used to understand the "actual forces induced in the shafts", said Mair.

On the Limmo Peninsula, fibre optics were installed on two panels, with the instrumented part of the panels measuring about 53m deep on walls that go down to a depth of 60-70m.

"What we were aiming to do was to achieve getting fibre optic on the inside of the extrados and the intrados of the D-wall in order to see to what extent the D-wall was subjected to bending inwards as a result of the soil loading. We also wanted to see what the hoop strains and stresses were," noted Mair.

The monitoring ultimately showed that "the compressive hoop strains were much more significant than the longitudinal bending strains", he added.

"So, the walls were actually bending inwards, so to speak. The strains there were very small indeed, despite the very heavy reinforcement cages in the wall panels."

As a result of the monitoring data, Mair said that it was "very clear" that the reinforcement for the longitudinal bending could have been significantly reduced, which is an "important design improvement".

Tunnels

Another example of performance-based design improvements from fibre optic sensing was on several cross passages that were built as part of Crossrail at Liverpool Street Station.

"It's always very complicated when you have tunnels interacting with each other," said Mair.

This was certainly the case at Liverpool Street Station, where there were two new platform tunnels on both sides, a central concourse tunnel and cross passages connecting all three tunnels.

To monitor the cross passages the fibre optic reinforcement was fixed onto the sprayed concrete in the cross passages before the next layers of sprayed concrete were sprayed.

Mair explained: "[That was to] measure what happens when the cross passage holes are made on either side, in other words what kind of strain concentration was associated with that."

As a result of the monitoring, "we learnt how much strain concentration really happens", he added.

"The potential design improvements are that we could get away with less material, less thickening; because there was extra thickening of the sprayed concrete in [one zone], we could do less of that, less excavation, which would take less time and would be safer construction."

Piles

Another example of fibre optic sensing being used in a particularly innovative way was on the Bank Station capacity upgrade, where a new tunnel had to be cut into existing piles. They were 50 year old under-reamed piles that supported a building, noted Mair.

As a result, a [load transfer solution that had never been used before was developed](#) to solve the tricky pile intercept. But as Mair explained, the engineering challenge also provided an opportunity to understand what happens when you cut a pile.

Mair and his team from Cambridge cored from the basement raft and installed fibre optics into two piles that were to be cut to measure what strain was going to be induced in both.

The data showed the strain change and tensile strain, said Mair.

"You can see at the point where the pile is cut there is a large amount of strain taking place. In fact, because those piles were 50-year-old unreinforced [ones], it was quite clear that a crack formed in the pile at a depth of about 3.5m below the basement level."

After the load transfer structure was built monitoring showed a slight reduction in the tensile strain. The monitoring data

also showed a settlement of about 4mm and an overall settlement of about 6mm.

"All of that was very satisfactory; there had been a huge amount of angst about this project – nobody likes to have their piles cut," Mair said.

"The power of this kind of advanced measurement is that it can really reassure the owners of piles but also everybody's concerns as a means of control during the tunnelling.

"But this kind of measurement, I think is really a very promising form of measuring soil-structure interaction in quite an advanced way."

Importance of monitoring

Mair ended his keynote speech by stressing that fibre optic sensor monitoring has "huge potential for strain measurement for many cases of soil-structure interaction".

While his examples showed that the technology has "enormous applicability" for performance-based design improvements in shafts, tunnels and piled rafts, it also has useful application for slopes, flood defences and many other structures.

"I focus on performance-based design improvements, but it's also got lots of applications in construction control, early warning detection," said Mair.

He concluded: "We need to fully exploit the digital transformation that we're in. And we need to make use of all the data we can get."

(Thames Menteth / GROUND ENGINEERING, 23 October, 2023, <https://www.geplus.co.uk/news/monitoring-soil-structure-interaction-can-improve-design-says-cambridge-universitys-robert-mair-23-10-2023>)

The Norwegian landslide early warning service turns 10 years old

Hervé Colleuille, Heidi Grønsten, Graziella Devoli (NVE)

It has been 10 years since the landslide and slushflow early warning service was established in Norway. It has played an important role in increasing awareness and knowledge about landslides (i.e., debris flows, debris avalanches) and slush-flows.

On the 21st of October 2013, the national landslide early warning service ("Jordskredvarslingen" in Norwegian) was officially launched during the Technology Days in Trondheim. Representatives from the Norwegian Water Resources and Energy Directorate (NVE), the Norwegian Public Roads Administration (NPRA), the Meteorological Institute (MET) and the Norwegian Railway Authority proudly launched and presented the coloured rubber boots that would illustrate the warning levels for both flood and landslide warnings. Ten years later, the wellies are still a symbol of flood and landslide danger, and a popular photo motif for external visitors.



The rubber boots that illustrate the warning levels used in the Norwegian flood and landslide early warning system.
Photo: Hervé Colleuille/NVE.

One of the first countries in the world with a nationwide landslide warning

Before 2013, there was limited national knowledge on temporal and spatial occurrence of debris flows, debris avalanches and slushflows. It was, therefore, an important step to establish a system that could warn these types of mass movements.

- The organization of the landslide warning has been a pioneering work. In 2013, Norway was one of the first countries in the world to develop a nationwide operational landslide early warning service, says Hege Hisdal, director of the Hydrology department at NVE.

National cooperation at its best

The landslide early warning service is currently operated as a collaboration between the Norwegian Water Resources and Energy Directorate (NVE), the Meteorological Institute (MET) and the Norwegian Public Roads Administration (NPRA). The group of landslide forecasters consists of hydrologists and geologists, with 15 employees from NVE and three from the Norwegian Public Roads Administration.

- We are both a contributor and a user of the landslide early warning service. We contribute directly to the service with some of our geologists and geotechnical engineers as landslide forecasters. In addition, we contribute to the further development of several Varsom products, says Viggo Aronsen, section leader at the Norwegian Public Roads Administration.

Warning notifications are important in the daily assessment of the level of emergency response to be issued by NPRA's natural hazards response unit, road managers and builders, responsible for the road maintenance. This is important so

that they can carry out preventive measures in case of increased emergency and, they can be prepared to handle possible landslide or slushflow incidents.

Weather observations and forecasts from the Norwegian Meteorological Institute (MET) are input data for models used to assess landslide and slushflow hazards. The landslide forecasters have a daily morning briefing with a meteorologist from MET. The representatives of NPRA's natural hazards response unit are also taking part to the daily morning briefing.

- The start in 2013 of the landslides and snow avalanches warning and forecasting services, the creation of varsom.no and the subscription solution to get warning notifications through e-mail and SMS, is an example of a common desire to offer useful and coordinated warning services to emergency authorities and the general public, says Bård Fjukstad, director of the forecasting division at MET. Through the creation of these warning services, we have also been able to expand our network of weather stations, through a collaboration with the three agencies. This contributes to better weather forecasts, adds Fjukstad.

Model-based notification service

The landslide warning service covers the mainland Norway and publishes daily hazard assessments for debris avalanches, debris flows and/or slushflows at regional level, for the current day and the next two days. Much of the basis for the hazard assessment is model based, i.e. the service uses mathematical models that reproduce the physical processes from precipitation that falls, snow that melts, water that infiltrates into the ground or evaporates, groundwater reservoirs that are filled with water, and water that flows into streams and rivers. The hazard assessment is based, among other things, on calculations of water supply, from rain and snowmelt, and water soil saturation for the coming days. Information from real-time observations of groundwater levels, past landslide and slushflow events, acquired experience and knowledge of both past weather conditions that have triggered landslides, and regional landslide susceptibility is also used in the assessment.

Climate change requires continuous development of the service

Although the landslide warning has been a success story, our users want more precise and local warning. Climate change can lead to increased and more intense precipitation and changed snow conditions, which will increase the risk of debris avalanches, debris flows and slushflows in the future. It is therefore necessary to be at the forefront, and to continuously develop and adapt the forecasting and warning service to meet these challenges.

- Over the past 10 years, the landslide early warning service in Norway has contributed to better social security. The service is an important tool for raising awareness of the risk of debris avalanches, debris flows and slushflows, and gives emergency responders and people more time and a better opportunity to take the necessary preventive actions. We can be proud of the work that has been done in the past 10 years, while at the same time we look forward to a continued development of landslide warning in the years to come, says Hege Hisdal, director of the Hydrology department at NVE.

Sharing experience internationally

In these 10 years, the Norwegian landslide early warning service has been promoting the close collaboration among researchers and practitioners all around the world, through the establishment of the LandAware – the international network on LEWS, that was a follow-up initiative of two workshops on territorial/geographical LEWSs, held in Oslo, Norway, in

2016 and in Perugia, Italy, in 2020. The Norwegian landslide early warning service is an active associate and al-ways willing to share knowledge and experiences through workshops and meetings organized as part of the international network.

-The managers of this system must be praised for their "openness" and their ability to engage, continuously during the last 10 years, with a wide international community of people and institutions that deal with warnings for landslides, at different levels and from different viewpoints, says Michele Calvello, President of the LandAware network and Professor at the Civil Engineering Department of University of Salerno, Italy.

The development of landslide warning in Norway is often used as inspiration and reference for other countries that want to build a similar warning service.

-NVE quickly became a reference in the community of researchers and professionals in the field of operational warning systems for landslides, avalanches, and floods. The combined implementation of meteorological, hydrological, and hydrogeological stations and numerical models constitutes a significant strength in the "Jordskredvarslingen" system. The willingness of NVE professionals to check the performance of the system, and to promote the exchange of information with other colleagues from all over the world is also noteworthy, says Stefano Gariano, Researcher at the Italian National Research Council - Research Institute for the Geo-Hydrological Protection CNR-Irpi, Italy.

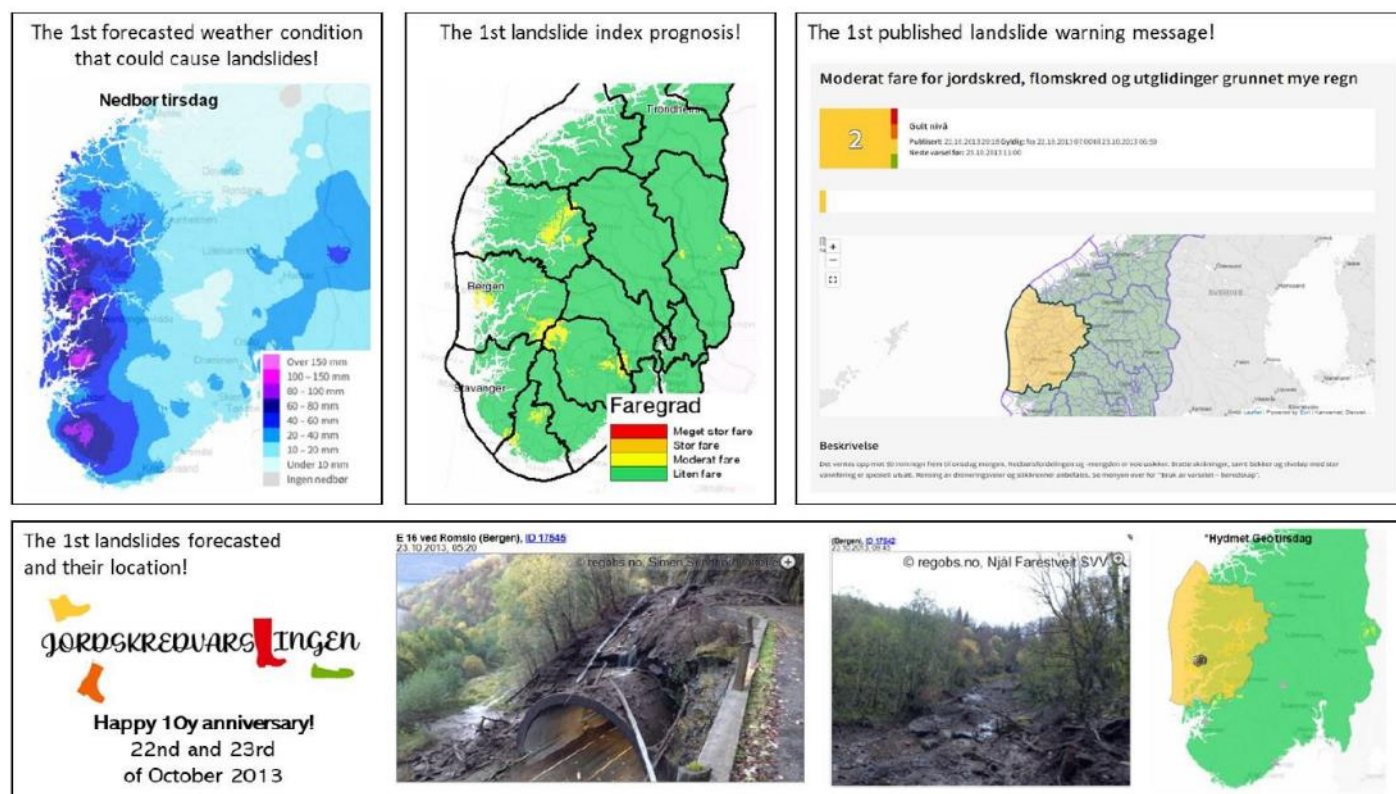
-The inspiration from the Varsom Xgeo system has been invaluable for the advancement of landslide forecasting and

management in Malaysia. We congratulate NVE and wish for it to continue excelling and become a leading institution in landslide research, says Mohd Farid Bin Abdul Kadir, Geoscience Officer at the Department of Mineral and Geoscience, Malaysia.

-As part of our work exploring the development of landslide early warning and awareness tools for deep-seated landslides across North America, we undertook an extensive review of the international state-of-the-art. The Norwegian landslide early warning system provides the best example of a fully operational data-driven approach that on which we use to demonstrate the desired end-state for our development in terms of analytical approach and operational delivery, says Corey Froese, Principal at Wavelength Advisory Services, Canada.

Fact: Large regional variation in the issued warnings

The first warning was sent on the 22nd and 23rd of October for western Norway on a yellow level. Over the past decade, the landslide early warning service has issued over 800 landslide warnings, averaging 30 and 120 per year. These warnings primarily fell under the yellow level (92%), with orange (7%) and red level (1%) being less common. The regions that have received most of the warnings and often at the most severe levels, are Trøndelag, Innlandet, Viken and Vestlandet. Conversely, Oslo, Agder, Rogaland and inner parts of Finnmark regions have received the fewest warnings. The years, 2020, 2014 and 2013, have been the years with the major number of issued warnings.

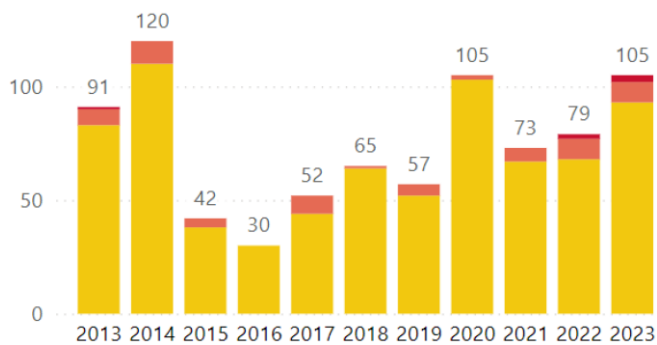


Summary of the first warning, sent on the 22nd and 23rd of October 2013. Illustration: NVE.

Useful tools developed by NVE in collaboration with MET and NPRA:

- [Varsom.no](https://varsom.no) is your main source for warning notifications and knowledge about natural hazards in Norway.

- At <https://abonner.varsom.no> you can subscribe to receive land-based natural hazard warnings from NVE and MET by e-mail and SMS, as soon as they are published. The service is free.



Number of landslide warnings sent annually between October 2013 and September 2023. Illustration: NVE.

- On <https://regobs.no> you can register, share observations and/or read about events related to snow avalanches, floods, landslides, and ice conditions. The information can also be found in the Varsom app, which can be downloaded from the App Store or Google Play.
- www.xgeo.no is our experts' source of data used for the daily hazard assessment of flood, snow avalanche and landslides.
- At <https://naturhendelser.varsom.no> we publish digital reports that describe significant weather-related events that have caused past floods, landslides, and other natural hazards in Norway.

<https://www.varsom.no/en/news/general/the-norwegian-landslide-early-warning-service-turns-10-years-old/>

AI predicts how many earthquake aftershocks will strike — and their strength

Alexandra Witze

Models trained on large data sets of seismic events can estimate the number of aftershocks better than conventional models do.



A powerful earthquake on 24 August 2016 killed hundreds of people in Amatrice, Italy (pictured) and was followed by destructive aftershocks. New machine learning models hold potential for predicting the number of quake aftershocks. Credit: Stefano Montesi/Corbis via Getty

Seismologists are finally making traction on one of their most tantalizing but challenging goals: using machine learning to improve [earthquake forecasts](#).

Three new papers describe deep-learning models that perform better than a conventional state-of-the-art model for forecasting earthquakes¹⁻³. The findings are preliminary and apply only to limited situations, such as in assessing the risk of aftershocks after a 'big one' has already hit. But they are a rare advance towards the long-sought goal of [harnessing the power of machine learning](#) to reduce seismic risk.

"I'm really excited that this is finally happening," says Morgan Page, a seismologist at the US Geological Survey (USGS) in Pasadena, California, who was not involved with the studies.

Not the weather forecast

Here's what earthquake forecasts are not: predictions of an event of a particular magnitude happening in a particular location at a particular time — the 'next Tuesday at 3 p.m.' scenario. The notion that scientists can make such highly specific predictions has been discredited. Instead, statistical analyses are helping seismologists understand broader trends, such as how many aftershocks might be expected in the days to weeks after a large earthquake. Agencies such as the USGS issue aftershock forecasts to warn people in quake-ravaged areas of what else might be coming.

At first glance, earthquake forecasts seem to be an obvious application to try to improve using deep learning⁴. The techniques do well when they ingest and synthesize large amounts of data and use them to predict the next steps in a pattern. And seismology is rich with data from catalogues of earthquakes that occur worldwide. Just as a large language model can train itself on millions of words to predict what word might come next, an earthquake-forecasting model should be able to [train itself on earthquake catalogues](#) to forecast the chances of a quake following one that has already occurred.

But researchers have struggled to extract meaningful trends from all the quake data⁵. Big earthquakes are rare, and working out what to worry about isn't easy.

In the past several years, however, seismologists have used machine learning to [uncover small earthquakes](#) that had not been spotted before in seismic records. These quakes have bulked up the existing earthquake catalogues, and provide fresh fodder for a second round of machine-learning analysis.

Current USGS forecasts use a model that relies on basic information about past earthquake magnitudes and locations to predict what might happen next. The three latest papers instead use a neural-network approach, which updates calculations during each step of the analysis to better capture the complex patterns of how earthquakes occur.

Seismic training

In the first¹, geophysicist Kelian Dascher-Cousineau at the University of California, Berkeley, and his colleagues tested their model on a catalogue of thousands of quakes that struck southern California between 2008 and 2021. Their model performed better than the standard one at forecasting how many quakes would occur in rolling two-week periods. It was also better at capturing the full magnitude range of possible earthquakes, thus reducing the chance of a surprise big one.

At the University of Bristol, UK, applied statistician Samuel Stockman developed a similar method that performed well when trained² on a catalogue of earthquakes that shook central Italy in 2016–17, damaging several towns. When researchers lower the magnitude of quakes included in the training set, "the machine-learning model starts to perform better," Stockman says.



Rubble piles still stood in Castro, Italy, almost a year after the village was damaged by the same earthquake that levelled Amatrice. Credit: Amelia Hennighausen/Nature

And at Tel Aviv University in Israel, physicist Yohai Bar-Sinai led a team that developed a third neural-network model³. When tested against 30 years of quake data from Japan, it, too, did better than the standard model. The work might provide insight into fundamental quake physics, Bar-Sinai says. "There is hope that we will understand more about the underlying mechanisms — about what causes earthquakes to start, what determines their magnitude."

Future of forecasting

All three models are "moderately promising", says Leila Mizrahi, a seismologist at the Swiss Federal Institute of Technology (ETH) in Zurich. They aren't breakthroughs in their current form, she says, but they show potential for bringing machine-learning techniques into quake forecasting on an everyday basis.

"It's certainly no silver bullet," adds Maximilian Werner, a seismologist at the University of Bristol who works with Stockman. But, he says, machine learning will gradually become part of official earthquake forecasting over the coming years, because it is so well suited to working with the huge earthquake data sets that are becoming more common.

Agencies such as the USGS will probably start to use machine-learning models alongside their standard one, and then transition entirely to the machine-learning approach if it proves to be superior, Page says. That could improve forecasts when aftershocks are rumbling unpredictably and disrupting people's lives for months, as happened in Italy. The models could also be used to improve forecasts after large rare earthquakes, including the [magnitude-6.8 earthquake that hit Morocco](#) in September, killing thousands.

Still, Dascher-Cousineau warns people not to rely on these fancy new models too much. "At the end of the day, preparing for quakes is the most important," he says. "We don't get to stop making sure our buildings are up to code, we don't get to not have our earthquake kits, [just] because we have a better earthquake-forecasting model."

doi: <https://doi.org/10.1038/d41586-023-02934-6>

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Building science: Considering steel sheet piles for semi-permanent or permanent subsurface water control for below-grade building spaces

Caroline F. Byrne, John N. Karras, and Bryan P. Strohman

Experts from Simpson Gumpertz & Heger explore this sheet pile “water management wall” approach.



Figure 1 - Example image of steel sheet piles used as support of excavation

Steel sheet piles have more than a century-long history of being used to support excavations for buried structures (Figure 1). During the construction process, the sheet piles traditionally provide earth retention and, in conjunction with a dewatering system, control of subsurface water into the construction site (both for leakage through the sheet pile system and for seepage below the sheet pile system).

In contemporary building development projects and in the context of subsurface water control, the role of the sheet pile system is typically temporary, until a dedicated waterproofing layer is applied to the building's foundation wall.

However, for projects that do not include moisture-sensitive below-grade spaces, project teams sometimes elect to forego foundation wall waterproofing and rely instead on sheet piles alone for semi-permanent or permanent reduction of subsurface water. One example project application is a wall demarcating adjacent portions of a multi-phased below-grade garage (where subsequent phases of the below-grade structure will be constructed several years after the initial phase).

To implement this sheet pile “water management wall” approach successfully, multidisciplinary teams must closely coordinate to set appropriate expectations, assign and execute design and construction roles, and incorporate technical considerations that are not otherwise a focus of traditional sheet pile support of excavation (SOE) design. In this article, we explore aspects of sheet pile subsurface water control systems for buildings organized by the project's primary stakeholders and considerations within their purview.

Owner/Developer

It is vital that the Owner/Developer's project team be informed with reasonable expectations of what will be required from their capital program during the service life of a building's below-grade water management system. Fundamentally, this includes the knowledge that the success of the sheet pile water management wall's long-term performance will rely on maintenance activities. In developing a program to manage periodic water infiltration (leakage) in service, the Owner/Developer should understand that such a program will likely include the following:

- Accessing and cleaning an internal drainage system at the base of the sheet pile wall.
- Maintaining the drainage discharge system (e.g., sump pumps, piping, and associated backup emergency power).
- Accessing the interior face of the sheet pile wall to perform leak remediation measures (e.g., chemical grout injection) if the leakage increases to a level the drainage system cannot reasonably manage.
- Treating contaminated groundwater (if applicable; see Environmental Engineer section below).

Architect

As part of their role in developing the project's overall design documentation, the Architect prepares construction drawings and specifications and coordinates with subconsultants who prepare specific aspects of the design. The sheet pile water management wall is inherently multidisciplinary, but the architectural details can help synthesize the basis-of-design for the architectural, structural, and plumbing features of the design.

If other foundation elevations or the underside of the slab is covered in waterproofing, the Architect (and their design consulting team, e.g., a Building Enclosure consultant) should consider and establish details for the integration between the sheet pile water management wall and the below-grade waterproofing system.

If the Architect decides to incorporate an interior partition to conceal the sheet pile wall, the design should account for the Owner's building management personnel's continuing need to periodically access the interior face of the sheet piles to perform the maintenance activities described previously. If interior programming would not allow the partition to be offset from the wall by a substantial distance, the design should seek to avoid scenarios where a partition that is closely offset from the sheet piles unnecessarily commits the Owner to costly and logistically challenging Confined Space operations or total partition demolition upon the need to access the sheet pile wall face.

One appropriate design strategy would be to use partition systems that can be readily removed/reinstalled by the Owner's maintenance personnel. Other design decisions that can be reflected on the architectural details include raising the bottom of the partition on a concrete curb to create a “gutter” to collect and divert leakage water to internal drains at the bottom of the sheet pile wall. The collected leakage water would be directed to sump basins that pump the water from the below-grade spaces.

Structural Engineer

The Structural Engineer of Record (SEOR), in addition to their role related to the below-grade building design, conventionally develops the structural basis-of-design for the SOE system, using site-specific conditions and parameters provided by the Geotechnical Engineer. Sheet pile design is often specified as a Delegated Design scope of work, i.e., with the final design completed by an engineer retained by the construction team. From the standpoint of designing for the sheet pile wall's water leakage control function, the SEOR should consider:

- Limiting the number of penetrations through the sheet pile wall to those that are structurally essential (e.g., at tie-back systems) to attempt to control the amount of water leakage and detailing those penetrations to limit water leakage. After the construction of interior floor slabs and once they have the capacity to brace the sheet pile wall, the structural engineer can consider recommending removal of now-redundant tie-back systems,

enabling the abandoned openings to be closed in a water-tight manner (e.g., welded cover).

- Requiring that the final design of the sheet pile bracing elements (e.g., walers) be positioned to avoid creating continuous interruptions to the vertical flow path along the face of the sheet piles (Figure 2). Because an obstructed flow path is more likely to cause leakage to be diverted to an unintended location (e.g., wetting and deteriorating the partition sheathing or entering the below-grade building space); it should flow relatively uninhibited to the leakage collection system at the base of the wall. Similarly, the SEOR can design the below-grade building structure to avoid interacting with the sheet pile wall in a manner that frequently interrupts the leakage flow path.
- Designing the below-grade building structure at intermediate slab edges to avoid restricting future access to the sheet pile face for leak remediation.
- Where the sheet pile system is located below the groundwater table elevation, requiring that the final design of the system resists hydrostatic pressure, including where the sheet piles interface with the below-grade building structure.

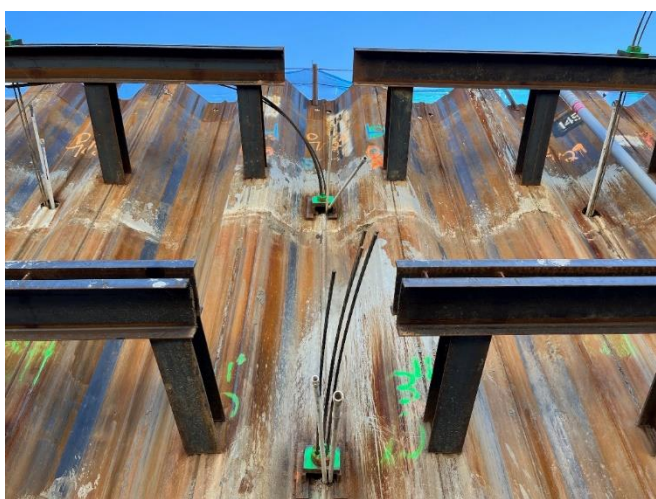


Figure 2 – Sheet pile wall with relatively uninterrupted vertical seepage path

Geotechnical and Environmental Engineers

The Geotechnical Engineer evaluates the existing subsurface and groundwater conditions at the site. Using this information (e.g., groundwater table elevations and anticipated fluctuations, soil type and stratigraphy, soil permeability, etc.), they can identify feasible SOE system types for consideration by the project team. If sheet piles are to be used as a semi-permanent or permanent water management wall, the Geotechnical Engineer can select reasonable leakage criteria for the sheet piles, which is an important parameter associated with the water management wall strategy.

Leakage criteria can be informed by available industry references. For example, the Naval Facilities Engineering Systems Command (NAVFAC) publishes the Soil Mechanics Design Manual 7.01 which contains information related to seepage criteria, including the following excerpt: "In pervious sand and gravel... the quantity of water passing through intact interlocks may be as much as 0.1 gpm per foot of wall length for each 10 ft differential in head across sheeting, unless special measures are taken to seal interlocks." The determination of leakage criteria should also be inclusive of specific attributes of the basis-of-design of the sheet pile wall (e.g., penetrations from soil tie-back anchors).

Moreover, the Geotechnical Engineer should identify the risks, if applicable for the project region and soil and ground-

water conditions, of mineral formation (e.g., iron ochre) on the sheet pile design strategy. The Geotechnical Engineer typically also evaluates the need for the sheet piles to serve a cutoff function to control seepage.

Some below grade structures in regions such as Washington, DC, have experienced failures of sub-grade drainage systems as a result of iron ochre. Iron ochre can decrease the ability of a drainage system (such as a sheet pile leakage collection system) to function by clogging drain openings and pipes (Figure 3). Such clogging can be detrimental to the Owner's maintenance program associated with the drains. Accordingly, in areas with known issues with iron ochre or drainage performance problems, a study of soil/groundwater chemistry should be performed to inform on the risk of iron ochre and other contaminants.



Figure 3 – Iron ochre buildup in sub-grade drainage system pipe

The Environmental Engineer provides recommendations for treating groundwater for contaminants, if applicable.

General Contractor

As part of planning to implement the construction of the below-grade building structure, the General Contractor often influences the selection of the SOE system based on factors including property line considerations, construction logistics, schedule, cost, sequence of building construction, and input from their SOE Trade Contractor. The General Contractor also typically controls the project's temporary dewatering program, which must be coordinated with the sequencing of bringing the sheet pile water management wall (and its leakage collection drainage system) into service at the appropriate time.

SOE Trade Contractor and Sheet Pile Manufacturer

Using the project design team, their experience, and information from the Sheet Pile Manufacturer and SOE delegated-design engineer retained by the construction team, the SOE Trade Contractor completes the final design of the selected SOE system and then executes its construction. Prior to project bidding, the SOE Trade Contractor should review and confirm the feasibility of the leakage and seepage basis-of-design established by the design team, including obtaining input from the Sheet Pile Manufacturer. The SOE Trade Contractor and Sheet Pile Manufacturer may consider the following as they plan how they will deliver the sheet pile water management wall to meet the project's criteria:

- Sheet Pile Construction Methods: Careful control of pile driving to minimize deviations from plumb to maximize contact within the interlocks can help limit leakage.

- **Sheet Pile Interlock Details (Figure 4):** Continuously welded interlocks between sheet piles after installation provide the most reliable resistance against sheet pile water leakage. If welding interlocks cannot be accommodated by the project budget, leakage-mitigating sealants (e.g., hot-applied bituminous products or cold-applied water-swelling products) can be applied to the sheet pile interlocks prior to pile driving.
- **Shop Drawing Phase:** Detailed shop drawings showing sheet pile features (e.g., interlock details, bracing details, transitions to adjacent systems, typical penetration types and how they will be treated to resist water penetration) are critical to this process. The shop drawings should also include repair methods for sheet piles that separate from each other or become misaligned during sheet pile driving.

While the above methods can help the sheet pile water management wall meet the project's leakage criteria, the ability to implement them can be impacted by sequence of the overall project's construction activities (i.e., top-down versus bottom-up construction sequencing, which is not discussed in detail in this article). With that said, the project team should review if/how construction sequencing affects the leakage mitigating strategies selected for the sheet pile wall.

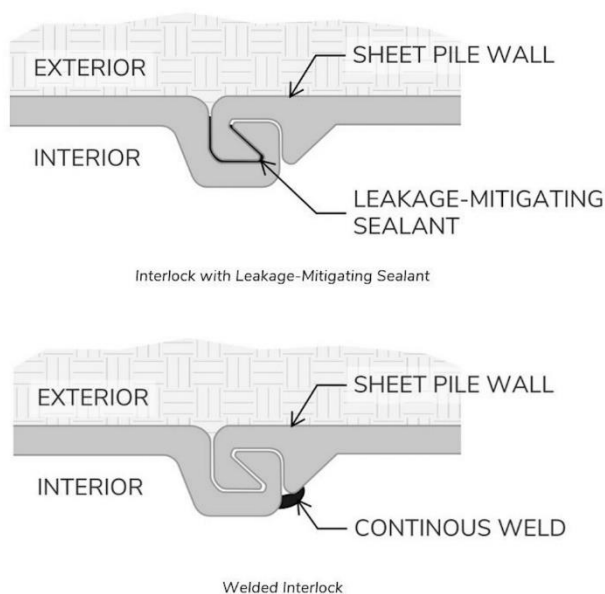


Figure 4 – Example graphics of interlock details for water management

Plumbing Engineer

After the project's permissible leakage rate is established, the Plumbing Engineer designs the internal drainage systems to collect and divert sheet pile leakage to sump basins during the service life of the building. This includes designing the appropriate drainage system layout, drain types and quantity with consideration to project-specific aspects of the sheet pile wall (e.g., locating drains directly below vulnerabilities such as at end conditions of the sheet pile wall where it meets adjacent below-grade structures).

Closing Remarks

Steel sheet piles can serve as part of a semi-permanent or permanent water management strategy for below-grade spaces where long-term management of leakage is not contrary to the function of the interior space. The successful execution of this strategy is dependent on realistic and well-communicated expectations, an integrated mindset and coordinated effort between a variety of project design, construction, and ownership entities.

The San Giorgio Bridge

David Lattanzi, Ferdinando Cannella and Mariapaola D'Imperio

The 2018 collapse of the Morandi Bridge was international news. Completed in 1967, the bridge carried the A10 motorway over the Polcevera Valley in Genoa, Italy. The dramatic collapse and deaths of 43 people shocked Europe, particularly an Italian engineering community that prides itself on a long legacy of engineering excellence. Many theories have been put forward regarding the cause of the collapse, ranging from very human lapses in maintenance and judgment to a lightning strike on a primary cable stay. As of this writing, the cause of the collapse is still under investigation. But this isn't a story about the Morandi Bridge collapse. It's the story of what came next.



RobotWash hard at work.

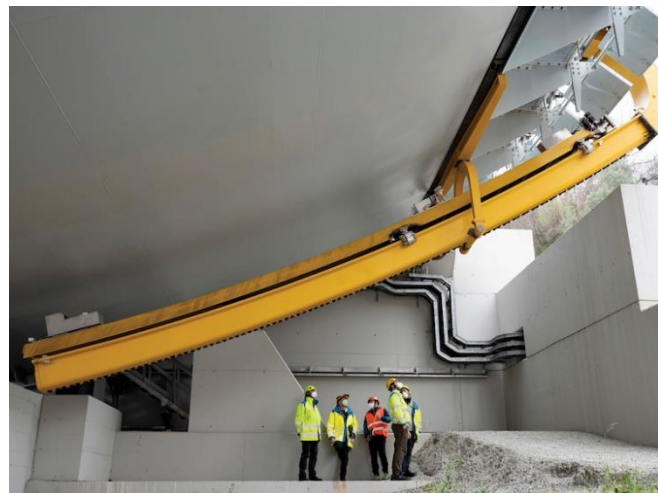
The Morandi Bridge was a critical link between communities in Genoa and the broader Liguria region of Italy. The loss of the motorway led to a year-long state of emergency and urgent pressure to design and build a replacement bridge as soon as possible. However, this replacement faced a slew of technical and societal challenges. A coastal city, Genoa has been known for its naval prowess for millennia, relying on its steady winds to send ships abroad. The Polcevera Valley serves to amplify these coastal winds, often accompanied by powerful storms. The designers didn't just need to consider complex environmental conditions but also complex psychological conditions. Perhaps more than any of us fully realize, civil engineering is an act of trust between builders and the communities they serve. Regardless of the cause of the Morandi collapse, the event shattered the public's trust in the safety of their infrastructure.

It is worth considering historical precedent to understand how designers address the psychological aspects of collapse. One of the most well-known and publicized bridge collapses ever was the Tay Rail Bridge disaster in Scotland. Constructed in 1878, the bridge was a technological marvel of its time. It employed a combination of complex truss latticework and cast-iron materials in the same manner used in the Crystal Palace and Gustave Eiffel's Massif Central viaducts. But in 1879, only 19 months after opening to the public, the bridge collapsed in high winds, killing the 75 passengers of a rail train crossing at the time. At the time of the collapse, another railway bridge was being designed to cross the nearby Firth of Forth. An analysis of the collapse led to a complete redesign of what would be known as the Firth of Forth Bridge. The redesign included an aesthetic emphasis on creating an iconic bridge that looked indestructible. That bridge is now a UNESCO world heritage and a significant tourist attraction for visitors to Edinburgh.

How was Genoa to recreate this process in the 21st century? It would not be enough to make the bridge look sturdy it also needed to symbolize Genovese resilience. Renzo Piano was just the man to accomplish that. Renzo Piano is, by any measure, one of the greatest architects working today and has designed countless iconic structures worldwide, including The Shard in London and the Pompidou Center in Paris. When he won the Pritzker Architecture Prize in 1998, he was compared to Michelangelo and Da Vinci, no small comparison for the Italian national icon. He also happens to be Genovese. Who better to lead the design of the Morandi replacement?

Piano's design went straight to the point: Genoa has been a sea power for millennia. The new bridge would celebrate that remarkable heritage while instilling a sense of solidity and security. It also had to handle the high winds of the Polcevera Valley, and construction speed was paramount, two critical factors for the bridge's design. The result was the new San Giorgio Bridge, with an elliptical profile that evokes a ship hull while providing optimal wind resistance. Internal to the elliptical "hull" is a steel box truss design that could be rapidly fabricated and assembled, reflecting a successful partnership between architect and engineer. The Morandi was a visually dramatic cable-stayed design. The San Giorgio is sleek, modern, and minimalist.

The design is beautiful and efficient, yet it did not address the psychological impacts of rebuilding after a collapse. Not only that, but Piano's design created two significant difficulties. The sound and wind barriers on the roadway were clear glass, which Piano insisted on so that motorists could take in the beauty of his iconic hometown. Maintaining that beautiful view meant keeping the glass consistently clean. Additionally, the combination of high winds and the elliptical profile of the bridge meant that traditional inspection equipment like snooper trucks and even modern inspection systems like drones would be infeasible. In short, the bridge would be a maintenance headache. Since some forensic studies pointed to maintenance problems as the cause of the Morandi collapse, this was not a trivial concern.



Engineers looking over InspectionRobot's retractable arm design.

The Istituto Italiano di Tecnologia (IIT) proposed a novel solution. They would design a team of robots that would be integrated into the bridge itself. One robot, "RobotWash," would be tasked with cleaning the bridge, particularly the glass barriers and solar panels. The other robot, "Inspection Robot," would inspect the ship-like structural exterior while serving as a highly visible manifestation of structural safety. Most importantly, these robots would work as part of a team with an integrated structural health monitoring system, forming a state-of-the-art digital twin of the bridge. Managers and engineers could dynamically interact with this digital twin in a high-tech command and control center to make mainte-

nance and inspection decisions. Piano's design was beautiful, but IIT's was bleeding edge tech. The design and construction of the robots were done in partnership between IIT and Camozzi Group, a major producer of industrial automation systems, and a consortium that included SDA (the structural designer), Università Politecnica di Marche (the defect detection system designer) and Ubisive (the human machine interface designer).

Each robot design was a first of its kind. RobotWash needed to traverse the length of the bridge on an integrated rail system, with a payload of cleaning brushes and accessories, like an automatic car wash. Given the similarities, the team at IIT brought in rollercoaster engineers to help with the design. The biggest challenge was the difference in construction tolerances between rollercoasters and bridges, which generally differ by order of magnitude.



InspectionRobot performing night work.

RobotWash was a challenging design, but InspectionRobot required innovation on an entirely different scale. Again, the high wind environment and one-of-a-kind structural design meant that commercially available inspection technologies weren't feasible. Eventually, the design for InspectionRobot settled on a huge robotic arm that could deliver a sensor payload of cameras and non-destructive testing equipment to any location on the bridge hull. The information from these sensors, combined with localization data from the robot, would allow the generation of a high-resolution 3D model of the bridge exterior, which could be continuously analyzed by humans and AI systems back at the bridge command center. Just like the design of the bridge, the design of Inspection Robot was governed by wind forces. Numerical simulations of the robot arm showed that it would be subjected to severe Venturi forces and various harmonic effects. It would also have to be massive, weighing over 5,000 pounds and telescoping to cantilevered lengths of over 25 feet, making it almost impossible to construct. The answer was to 3D print the robotic arm out of carbon fiber to reduce its self-weight. The 3D printing also allowed the team to design optimal wind-breaks along the arm's length to reduce the Venturi effect forces.

The complexity of the working environments and the intricate robotic designs meant that both robots needed to operate autonomously with minimal human intervention. Inspection Robot, operating almost continuously, would generate massive amounts of data that needed to be aggregated and analyzed in conjunction with the integrated sensor system. Engineers and managers needed to be able to engage with the complete set of bridge data interactively and intuitively, so the bridge needed a brain, or at least as close as we're able to come today. Just off-site from the bridge is a facility that houses the servers and data storage for the bridge. While the idea of a high-performance computer for a bridge is remark-

able on its own, the most interesting aspect of the facility is the intuitive digital twin interaction system that allows engineers to visualize bridge data, evaluate the behavior and performance of the robots themselves, engage with AI-driven recommendations, and manage robot activities. It is a remarkable design of human-machine interactivity that sets the standard for the emerging field of digital twin-driven structure management.



Interacting with the San Giorgio Bridge's digital twin.

Here's the kicker: not only is this one of the most cutting-edge bridges in the world but it was all built in less than a year. While IIT and Camozzi worked furiously on the design and manufacturing of the robots, Fincantieri led the fabrication and construction of the bridge. The 3.5-kilometer bridge was inaugurated in August 2020, a little over one year from construction and almost two years after the Morandi collapse. That any large bridge could be designed and built within that time frame is an engineering achievement. That it could also serve as a technological and architectural paragon is nothing short of remarkable.

What does the San Giorgio Bridge mean for the future of our profession? Are we all going to need to become roboticists? The San Giorgio Bridge's unique circumstances drove the integrated robotics concept, and it is unlikely that every bridge will have its own robot workforce. But drones and inspection robots continue evolving into essential bridge inspection and management tools, as are digital twin systems. While RobotWash and InspectionRobot probably aren't coming to a highway overpass near you, they show an exciting path forward for robotics, advanced computing, and human-machine interaction in our industry. Our challenge is to figure out how to embrace these ideas to innovate how and where we build and train future generations of engineers who will work with these technologies.

About the author / David Lattanzi, Ph. D., P. E.

David Lattanzi, Ph. D., P. E., is an associate professor of civil engineering at George Mason University. A former bridge engineer, he studies how to integrate robotics and artificial intelligence into civil infrastructure systems. He is the current chair of the SEI Bridge Technical Administrative Committee.

(Oct, 2023, <https://www.structuremag.org/?p=25413>)

ΝΕΑ ΑΠΟ ΤΙΣ ΕΛΛΗΝΙΚΕΣ ΚΑΙ ΔΙΕΘΝΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΝΩΣΕΙΣ



International Society for Soil Mechanics and Geotechnical Engineering

ISSMGE News & Information Circular October 2023

www.issmge.org/news/issmge-news-and-information-circular-October-2023

1. ISSMGE BULLETIN

ISSMGE is launching a new bulletin edition and the President, Vice-Presidents and all board members are encouraging you to send an article or summary about your completed or planned activities, or special projects in your country, for publication in the next issue. Please send to the ISSMGE Secretariat (secretariat@issmge.org) with a copy to the Editor-in-Chief, Professor Anthony Leung (ceanthy@ust.hk).

Please keep feeding us with your exciting news regularly so that our bulletin from now on becomes richer and more animated!

The latest edition of the ISSMGE Bulletin (Volume 17, Issue 3, June 2023) is available from the [website](http://www.issmge.org).

2. ISSMGE FOUNDATION

The next deadline for receipt of applications for awards from the ISSMGE Foundation is the 31st January 2024. Click [here](http://www.issmge.org) for further information on the ISSMGE Foundation.

3. CONFERENCES

[Member Societies, Technical Committees, Sister Societies and related organisations may add their events directly to the ISSMGE Events database via the link + Submit Event at the top of the EVENTS page](#)

For a complete listing of all ISSMGE and ISSMGE supported conferences, and full information on all events, including deadlines, please go to the Events page at <https://www.issmge.org/events>. For updated information please refer to that specific events website.

The following events have been added or amended since the previous Circular:

ISSMGE EVENTS

28TH EUROPEAN YOUNG GEOTECHNICAL ENGINEERS CONFERENCE 2024 - 25-06-2024 - 29-06-2024 Popova Kula - Demir Kapija, North Macedonia; Language: English; Organiser: Macedonian Association for Geotechnics; Contact Information: Ms. Elena Angelova; Address: Blvd. Partizanski

odredi No.24; Email: maq@qf.ukim.edu.mk; Website: <https://eygec2024.net/>

NON-ISSMGE EVENTS

AGS SYDNEY SYMPOSIUM 2023 - 10-11-2023 - 11-11-2023 Australian National Maritime Museum, Sydney; Language: English; Organiser: Australian Geomechanics Society Sydney Chapter; Contact Information: Cholachat Rujikiatkamjorn; Address: University of Technology Sydney; Phone: +61401206959; ail: cholachat.rujikiatkamjorn@uts.edu.au; Website: <https://australiangeomechanics.org/meetings/sydney-symposium-2023/>; Email: Mehdi.Tamadon@ghd.com

Announcing the Publication of the 2023 Geotechnical Business Directory

ISSMGE IT Administrator / General / 02-10-2023



[Geoworld](http://geoworld.org), the network for geotechnical engineers, has just published the 2023 Geotechnical Business Directory. The directory is published with the support of the International Society for Soil Mechanics and Geotechnical Engineering. This is **the ninth year for the Geotechnical Business Directory, the most comprehensive directory in the geotechnical engineering field!**

This truly unique directory is available in **three** formats:

- (a) an [Online Interactive Platform](#),
- (b) an [e-book](#), and
- (c) [in-print through Amazon](#)

The 2023 index has grown significantly since last year and includes **32,000+ members**, and **1,000+ geo-companies** and **geo-organizations** from a total of **162 countries**. It is expected to reach 50,000+ professionals through various media channels. The online platform of the directory allows visitors to search for professionals or companies based on location, experience, expertise, industry and other parameters. **There is no other such directory in geotechnical engineering.** The directory is also a "live" publication in the sense that as more members join and complete their profiles, the publication will become more comprehensive.

The online platform of the directory, which is updated daily, has increased search functionality compares to the e-book and printed version.

GeoWorld's team is already working on the 2024 Business Directory that is expected to include 35,000+ individuals and 1,100+ companies and organizations.

Income generated from the Geotechnical Business Directory is also directed as a donation to the ISSMGE Foundation.

If you are not a member of [GeoWorld](http://geoworld.org), visit the website and join at no cost, so that you can be part of the 2024 Geotechnical Business Directory.

In Memoriam: Mladen Vucetic

ISSMGE Secretariat / General / 16-10-2023



We are saddened to report that Professor Mladen Vucetic passed away on October 4, 2023 in Los Angeles, CA. Mladen was a civil engineer with an international reputation in soil dynamics and a mentor to many undergraduate and graduate students in his 31-year academic career.

Mladen received his bachelors and masters degrees in civil engineering from the University of Zagreb, Croatia in 1976 and 1981, respectively. He completed his doctoral work at Rensselaer Polytechnic Institute under the tutelage of renowned Professor Ricardo Dobry in 1986. His PhD dissertation was titled *Pore pressure buildup and liquefaction at level sandy sites during earthquakes*.

Mladen joined UCLA in 1987 as an Assistant Professor, advancing to Associate Professor with tenure in 1993, and full Professor in 2000. He retired from the active faculty in 2018.

Mladen taught many courses over his academic career, but was perhaps best known for two undergraduate courses (CEE 120 Introduction to Geotechnical Engineering, CEE 128L Soil Mechanics Laboratory) and two graduate courses (CEE 222 Soil Dynamics, CEE 224 Advanced Cyclic and Monotonic Soil Behavior). These courses inspired countless UCLA students over three decades.

Mladen's research passions were to improve fundamental understanding of soil responses to dynamic loading, such as applied by earthquake shaking. Working with Professor Dobry and Mladen's students and collaborators, he significantly advanced understanding of how stiffness and energy dissipation characteristics vary among different soil types. He also made important contributions to understanding of the deformations required to induce nonlinear soil response. His work in these and other areas was presented in a series of highly-impactful articles that continue to be routinely cited and applied in Geotechnical Engineering research and practice.

Mladen advised 8 doctoral students during his career, each of whom have gone on to successful careers in geotechnical engineering industry, academia, or research laboratories.

Mladen was an active contributor to professional societies, including the Croatian Geotechnical Society (CGS) and the ASCE Geo-Institute. In the CGS, he is remembered for his long-time support and for his 2014-year Nonveiller Lecture, which he gave in Zagreb in honor of Professor Ervin Nonveiller. In the Geo-Institute, he served as a member and chair of the Los Angeles Section Geotechnical group, which is among the most active in the United States.

Professor Mladen Vucetic is remembered as an innovative geotechnical engineer, a demanding and dedicated teacher, and a colleague committed to UCLA, his profession, his students, and his family. He is survived by his wife Lana Vucetic, daughter Sonia Vucetic, and son Alan Vucetic.

Announcing the 7th McClelland Lecturer – Dr Philippe Jeanjean

Katherine Lundy / [TC209](#) / 23-10-2023

The McClelland Lecture is the honour lecture of ISSMGE TC209, with the recipient selected by a panel of peers from across the offshore geotechnical profession.

The 7th McClelland Lecturer will be delivered at the [5th International Symposium on Frontiers in Offshore Geotechnics](#) in June 2025 (Nantes, France).

Announcing the 7th McClelland Lecturer Dr Philippe Jeanjean

ISSMGE Technical Committee 209 Offshore Geotechnics is delighted to announce that Dr Philippe Jeanjean of bp has been invited to deliver the 7th McClelland Lecture.

Philippe has made substantial contributions to the field of offshore geotechnics. This includes developments in offshore site investigation where he helped guide the development of large diameter, high quality soil sampling systems and various insitu testing apparatus such as the Stinger CPT; and in integrated geohazard studies including his leadership of diverse teams of geologists, geophysicists, oceanographers, geotechnical engineering, risk and reliability experts and numerical modelling specialists to address risks associated with several deepwater Gulf of Mexico projects. In recognition of his contribution to the field of site characterisation, the United States Board on Geographic Names approved the naming of an underwater feature in the Gulf of Mexico as Jeanjean Basin in 2015.

Philippe has also pioneered new engineering practices for the design of jetted conductors and led physical modelling campaigns that have informed the performance on suction anchors and laterally loaded piles and with latter culminating in a framework that will be included in the next edition of ISO 19901-4.

Philippe chaired API Committee RG7 from 1999-2014, and ISSMGE TC209 on Offshore Geotechnics from 2009-2017. He has delivered several named lectures, including as Coulomb Lecturer (2019) and Spencer J. Buchanan Lecturer (2021), and co-chaired the 4th International Symposium on Frontiers in Offshore Geotechnics held in Austin, 2022.

Congratulations Philippe!

ISSMGE Interactive Technical Talk Episode 11: Observational Method (TC206)

ISSMGE IT Administrator / [TC206](#) / 23-10-2023

The eleventh episode of International Interactive Technical Talk has just been launched and is supported by TC206. Duncan Nicholson, Tony O'Brien, Ying Chen and Anyang Yaw Michael are discussing with Dr. Marc Ballouz about Observational Method.

[Watch ISSMGE Interactive Technical Talks](#)

3rd ISSMGE TC217 Online Seminar Series: 1st Seminar on 16th November 2023

Siau Chen Chian / [TC217](#) / 31-10-2023

TC217 Land Reclamation is proud to continue the tradition of disseminating state-of-art land reclamation practices by

hosting the 3rd annual series of land reclamation online seminars. The details of the 1st seminar are provided below.

Seminar Programme:

Title: Some Case Histories on the Application of Vacuum Pre-loading

Speaker: Dr Gouw Tjie-Liong, Senior Geotechnical Consultant and Associate Professor at Universitas Katolik Parahyangan Bandung

Time: 16th November 2023, 7pm (GMT+8h)

Registration link: https://us06web.zoom.us/webinar/register/WN_XQ6SnCJrTzy2RC9V1_fETw#/registration

Attendees of the full series of the coming 3 seminars would be provided a certificate of attendance from the ISSMGE TC217 Chair as a gesture of appreciation of support to the seminars. Please send us your request of the certificate and we will send the softcopy to you upon verifying your attendances.

We look forward to receiving your registration and meeting you in the seminar.

Sincerely,

A/Prof Darren Chian
Secretary, TC217 Land Reclamation

3rd ISSMGE TC217 Online Seminar Series: 2nd Seminar on 23rd November 2023

Siau Chen Chian / [TC217](#) / 31-10-2023

TC217 Land Reclamation is proud to continue the tradition of disseminating state-of-art land reclamation practices by hosting the 3rd annual series of land reclamation online seminars. The details of the 2nd seminar are provided below.

Seminar Programme:

Title: Land reclamation in Monaco - The "Anse du Portier" Project

Speaker: Jerome Racinais, Engineering Director, Menard

Time: 23rd November 2023, 7pm (GMT+8h)

Registration link: https://us06web.zoom.us/webinar/register/WN_3FLObmpKS2WF-kucrdqYqw

Attendees of the full series of the coming 3 seminars would be provided a certificate of attendance from the ISSMGE TC217 Chair as a gesture of appreciation of support to the seminars. Please send us your request of the certificate and we will send the softcopy to you upon verifying your attendances.

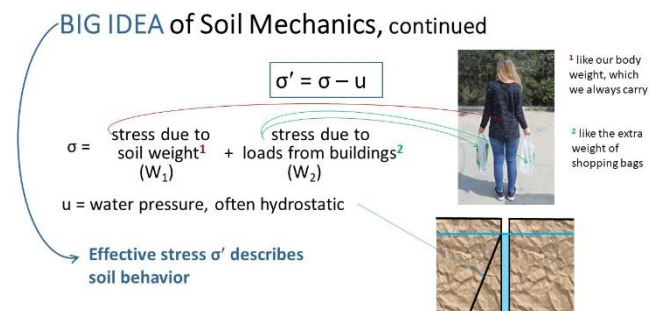
We look forward to receiving your registration and meeting you in the seminar.

Sincerely,

A/Prof Darren Chian
Secretary, TC217 Land Reclamation



ISSMGE Educational Video: "What happens when soil compresses", using best instructional practices



ISSMGE Educational Video: "What happens when soil compresses" by Prof. Marina Pantazidou

The [Technical Committee 306 Geo-Education](#) of the [International Society for Soil Mechanics and Geotechnical Engineering \(ISSMGE\)](#) and its Chair Prof. Marina Pantazidou are pleased to launch an educational video on "[What happens when soil compresses](#)" using best instructional practices, and make it available through ISSMGE's [Virtual University platform](#). Specifically:

- [The video is segmented](#) in short-duration subsections, each with a descriptive title.

Segmenting a presentation in smaller subsections (recommended 7-15 min) facilitates attendance, and the subsection titles help the audience grasp the logical structure of the webinar/course. The platform interface makes it apparent that the subsections are parts of the same course. Attendees are guided to view them sequentially, while they are free to choose their own viewing order.

- Subsections are accompanied with quizzes of multiple choice questions.

Research evidence has shown that frequent quizzes result in higher learning gains than reviewing. Questions may have a single or multiple correct answers; the number of correct answers may be specified or not (for added challenge). Wrong answers can be accompanied with a short commentary. NOTE: Quizzes are visible only in the "Enroll" mode, not in the "View" mode.

- The presentation slides and transcript are available for download.

The availability of the slides and transcript allow for quick and targeted reviewing of the presentation, which can become cumbersome in a watch-only mode. This feature also facilitates peer review, which will raise the standard of VU content.

- The transcript appears as text next and below the presentation slides.

This feature also facilitates attendance and is particularly helpful for presenters and attendees whose native language is not English.

You can watch the Education Video [here!](#)

(geoengineer, 29.10.2023, <https://www.geoengineer.org/education/soil-mechanics/issmge-educational-video-what-happens-when-soil-compresses-using-best-instructional-practices>)



News

<https://www.isrm.net>

ISRM Council Meeting, 10 October 2023



The ISRM held its 2023 Council meeting on 10 October in Salzburg, Austria, in conjunction with the 15th ISRM International Congress on Rock Mechanics.

51 National Groups were represented at the Council, which was also attended by the Board members, the Past President Xia-Ting Feng, the Presidents of the IAEG and ITA, and the Immediate Past President of the ISSMGE, Commission chairs as well as observers from the National Groups.

The annual Board meeting and the Commission meetings took place before the Council.

Membership of the ISRM



The ISRM has an all-time record of 9306 individual members and 172 corporate members, belonging to 59 National Groups. The National Group of Pakistan was approved in the Board meeting.

2025 ISRM International Symposium will be in Trondheim, Norway

The National Group of Norway presented an excellent proposal to host the 2025 ISRM International Symposium and Eurock 2025 in Trondheim. Being the only application received for this year, the Council approved it by acclamation.

Election of the new Board 2023-2027

The Regional Vice Presidents of the ISRM Board 2023-2027, chaired by the President Seokwon Jeong, from the Republic of Korea, were elected during the Council meeting. Africa: Jannie Maritz from South Africa; Asia: Ki-Bok Min from R. Korea; Australasia: Qianbing Zhang from Australia; Europe: Muriel Gasc-Barbier from France; Latin America: Esteban Hormazabal from Chile; North America: Martin Grenon from Canada.

ISRM Award winners were announced

Rocha medal 2024: The Rocha Award Committee selected the winner of the Rocha Medal 2024 and two runners-up.

Winner: Kazuki Sawayama, from Japan, Kyushu Univ., Japan.

Runners-up: Liu Kai, from China, Monash Univ., Australia; Mingzheng Wang, from China, Laurentian Univ., Canada.

Technological Innovation Award 2023: Shandong University, China.

Young Rock Engineer Award 2023: Dr Wang Qi, China.

Best National Group Award 2021-2023: North Macedonia and China.

Outstanding Commission Award 2019-2023: Commission on Discontinuous Deformation Analysis - DDA.

ISRM Board meeting held on 8 October



The ISRM Board met in a physical meeting prior to the Council meeting. A detailed discussion on the past activities took place and decisions were taken for future activities.

15th International ISRM Congress, Salzburg, Austria 2023-10-03

Only a few more days and the 15th International ISRM Congress together with the 72nd Geomechanics Colloquium 2023 will start in Salzburg. [Click to know more.](#)

Videos of the ISRM Awards recipients 2023-10-03

Videos of the John Hudson Rock Engineering Award and ISRM Young Rock Engineer Award are now online in the [Awards section](#) of the site. They are:

- ISRM Young Rock Engineer Award:
 - 2022 - Dr Yota Togashi, from Japan ([CV](#) and [Presentation Video](#))
 - 2023 - Dr Wang Qi, from China ([CV](#) and [Presentation Video](#))
- John Hudson Rock Engineering Award:
 - 2022 - [Christine Detournay](#), from USA, [Contributing to solving important practical rock engineering problems](#) (Video)

Online Course of Slope Engineering on the ISRM website 2023-10-03

The online Course of Slope Engineering was produced by Professor Wu Shunchuan from Kunming University of Science and Technology, China.

Focusing on the stability of slope engineering, the course starts from the basic concept and theory of slope and then introduces the influencing factors, calculation methods, treatment measures and engineering effect monitoring of slope stability. The course has ten parts, with a total of 37 lectures.

Find it on the [Courses page](#) of [ISRM Products and Publications](#).

Course on Rock Dynamics and Recent Advances 2023-10-03

The online course of Rock Dynamics and Recent Advances is by [Professor Ömer Aydan](#).

Rock dynamics has become one of the most important topics in the field of rock mechanics and rock engineering. The spectrum of rock dynamics is very wide and it includes the failure of rocks, rock masses and rock engineering structures such as rockbursting, spalling, popping, collapse, toppling, sliding, blasting, non-destructive testing, geophysical explorations, science and engineering of rocks, impacts etc. The main purpose of this course is to describe the State of the Art on Rock Dynamics and recent advances in experimentation and monitoring, together with some field implementations. It is hoped that this would be a milestone in advancing the knowledge in this field and leading to new techniques for experiments, analytical and numerical modelling as well as monitoring in dynamics of rocks and rock engineering structures.

The course has 11 parts, each of them with several topics. The first part was made available in October 2023, and the remaining parts will be available in the coming months. Find it on the [Courses page](#).

ISRM Council Meeting, 10 October 2023 2023-10-12

The ISRM held its 2023 Council meeting on 10 October in Salzburg, Austria, in conjunction with the 15th ISRM International Congress on Rock Mechanics.

51 National Groups were represented at the Council, which was also attended by the Board members, the Past President Xia-Ting Feng, the Presidents of the IAEG and ITA, and the Immediate Past President of the ISSMGE, Commission chairs as well as observers from the National Groups.

The annual Board meeting and the Commission meetings took place before the Council.



Scooped by ITA-AITES #102, 3 October 2023

[China wants to build an underground base on the moon](#)

[Pink Line of Bengaluru Metro to be 90% ready by second-half of 2024 | India](#)

[Bali's new railway will be an underground line connecting tourist destinations | Indonesia](#)

[Application of sprayed concrete or shotcrete](#)

[ITA unveils shortlist of finalists for the 2023 Tunnelling Awards](#)

[How Norway built the world's coolest bike tunnel](#)

[The Emergence of underground architecture](#)

[Work over half-way done on Anderson Dam tunnel in Morgan Hill | USA](#)

[Fehmarnbelt tunnel one step closer to segment immersion | Denmark - Germany](#)

[Construction begins on mountain tunnel for Mumbai-Ahmedabad high-speed rail corridor | India](#)

[\\$583M stormwater tunnel complete in DC | USA](#)

[Crews free section of trapped micro-tunnelling boring machine | Canada](#)

Scooped by ITA-AITES #103, 17 October 2023

[Working group assessing feasibility of Westman Islands Tunnel | Iceland](#)

[The Palais des congrès de Montréal to host World Tunnel Congress in May 2026 | Canada](#)

[Can the World's Longest Tunnel Solve One of Europe's Worst Bottlenecks? | Italy - Austria](#)

[First TBM in place for Metro Manila Subway | The Philippines](#)

[Bengaluru traffic: Karnataka govt proposes to build 190-km tunnel to ease congestion | India](#)

[Dublin MetroLink 'won't have a final cost until it goes to tender' - Minister | Ireland](#)

[Croatia wants to turn this superhot underground lake into a 16MW geothermal power plant](#)

[Secondary lining finished on Tideway's eastern section | UK](#)

[Israel's biggest data center planned for disused Timna mine](#)

[The Mont-Blanc tunnel closes for two months from October 16 for maintenance work | France - Italy](#)

[NZ government backs light rail and new tunnel for capital](#)



News

[IGS Launches Sustainability Benefits Calculator](#) October 2, 2023

A game-changing online tool to help compare the sustainability gains of using geosynthetics versus other materials is now live. The IGS Sustainability Benefits Calculator offers... [Read More »](#)

[Crucial Votes Passed At IGS General Assembly](#) October 5, 2023

Proposals to improve the operation and financial stability of the IGS were supported at the recent IGS General Assembly in Rome. IGS members at the... [Read More »](#)

[Outstanding Service And Innovation Recognised At IGS Awards](#) October 6, 2023

Youth and experience were honored in equal measure at accolades given at the recent 12th International Conference on Geosynthetics (12th ICG) in Rome. The IGS... [Read More »](#)

[JP Giroud Heads IGS 40th Birthday Week Lectures](#) October 9, 2023

Register now for a unique week of virtual lectures to mark the IGS's 40th anniversary this November. Geosynthetics pioneer JP Giroud will be giving a... [Read More »](#)

[Generating Greener Energy With Geomembranes](#) October 10, 2023

A new high temperature-resistant geomembrane has been helping optimize heating distribution in Denmark. The specialist material has been used to line and insulate a thermal... [Read More »](#)

[Quiz IGS Officers In Exclusive 40th Birthday Week Sessions](#) October 12, 2023

Get your burning questions answered by the IGS Officers in a unique Q&A series to mark four decades of the IGS. This November the Society... [Read More »](#)

[Students And Industry Forge Links At IGS Brazil Conference](#) October 16, 2023

Young engineers strengthened their ties with industry and academia at a 'knowledge exchange' in Brazil. More than 70 delegates attended 'Conexão Geossintéticos', the second such... [Read More »](#)

[Young Member's 12th ICG Paper Paves The Way to Success](#) October 17, 2023

An e-bike is on the shopping list after Subramanian Sankaranarayanan, also known as Subu, won the Best Young Member Paper prize at the 12th International... [Read More »](#)

[Geotextiles And Geomembranes: Best Papers For 2022 Announced](#) October 17, 2023

A paper exploring experimental geomembrane leakage tests has been named paper of the year by IGS journal Geotextiles and Geomembranes. The annual accolade given by... [Read More »](#)

[10 Questions With... Francisco Pizarro](#) October 23, 2023

It's a busy time for Francisco Pizarro as chair of the IGS Pan-American Regional Activities Committee and World Council Member. Here he shares his plans... [Read More »](#)

[Register Now For Jorge Zornberg's 40th Birthday Week Lecture](#) October 30, 2023

Professor Jorge Zornberg, whose career in geosynthetics is almost as long as the IGS has existed, will give the opening talk for the IGS 40th... [Read More »](#)

[Don't Miss Sustainability Talk For IGS 40th Birthday Week](#) October 31, 2023

David Shercliff and Kasia Zamara will share how the IGS has spent '40 years saving the earth' at their IGS 40th Birthday Week Lecture on... [Read More »](#)

ΠΡΟΣΕΧΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ

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

ACUUS SINGAPORE 2023 18th Conference of the Associated Research Centers for the Urban Underground Space "Underground Space – the Next Frontier", 1 - 4 Nov 2023, Singapore, www.acuus2023.com

ATC 2023 18th Australasian Tunnelling Conference: Trends and Transitions in Tunnelling, 5-8 November, 2023, Auckland, Aotearoa New Zealand <https://atc2023.com>



14-16 November 2023, Tsu City, Mie, Japan
<https://geomate.org/index.html>

The 13th International Conference on Geotechnique, Construction Materials and Environment, GEOMATE 2023, will be held in Hotel Tsu Center Palace, Tsu City, Mie, Japan, in conjunction with the Mie University Research Center for Environmental Load Reduction, The GEOMATE International Society, Japan.

It aims to provide a great opportunity to share common interests in geo-engineering, construction materials, environmental issues, water resources, and earthquake and tsunami disasters.

The conference will be dedicated to those affected by the tragic Tohoku-Kanto earthquake, which occurred on Friday, 11 March 2011, at 14:46 Japan Standard Time, in which the northeast of Japan was severely damaged.

The twelve previous events were held in Tsu City, Mie, Japan; Kuala Lumpur, Malaysia; Nagoya, Japan; Brisbane, Australia; Osaka, Japan; Bangkok, Thailand; Mie, Japan; Kuala Lumpur, Malaysia; Tokyo, Japan; Melbourne, Australia; Kyoto, Japan and Bangkok, Thailand.

The organizers encourage and welcome your enthusiastic participation and look forward to receiving contributions demonstrating in-depth multidisciplinary technology toward new research and development.

Themes

Conference themes will consider papers in the following topics:

- Advances in Composite Materials
- Computational Mechanics
- Foundation and Retaining Walls

- Slope Stability
- Soil Dynamics
- Soil-Structure Interaction
- Pavement Technology
- Tunnels and Anchors
- Site Investigation and Rehabilitation
- Ecology and Land Development
- Water Resources Planning
- Environmental Management
- Earthquake and Tsunami Issues
- Safety and Reliability
- Geo-Hazard Mitigation
- Case History and Practical Experience
- Others

Contact Us

Conference contact : conference@geomate.org

Geomate journal contact: editor@geomatejournal.com



6th World Landslide Forum "Landslides Science for sustainable development", 14 to 17 November 2023, Florence, Italy, <https://wlf6.org>

4th International Tunnelling and Underground Space Conference- Lagos, 2023, 15-16 November 2023, Lagos, Nigeria, www.tunnellingnigeria.org

CREST 2023 – 2nd Construction Resources for Environmentally Sustainable Technologies, November 20-22, 2023, Fukuoka, Japan, <https://www.ic-crest.com>

TUNNELLING ASIA 2023 International Conference on Climate Resilience and Sustainability in Tunnelling and Underground Space, 22-23 November 2023, Mumbai, India, <https://www.tai.org.in>



November 22-24, Istanbul, Turkey
<https://9geoteknik.org>

We are both thrilled and elevated to invite you to the 9th of the biennial Geotechnical Symposiums organized by the Istanbul Branch of the Turkish Chamber of Civil Engineers. This occasion is marked by the joyous culmination of the Covid pandemic period which limited our interactions to computer screens and we are looking forward to share the fruits of our studies that progressed against all odds with pride and pleasure.

Among complex and ever-diversifying civil engineering applications, the role and impact of geotechnics on the sustainability of civilization is continuously increasing. As expected, the rate of information and experience generation in such a

critical engineering specialty is very high. Developments both in academia and industry are interconnected and requires constant interaction. Consequently, the rapid progress of knowledge and practice requires platforms for discussion, evaluation and cooperation. Within this context, geotechnical symposiums are organized in response to this craving to provide mediums for professional growth and academic communication.

In pursuit of these goals, our organization committee is working meticulously for the next geotechnical symposium and invites you to contribute in all possible capacities. We are welcoming you, our colleagues, to the 9th Geotechnical Symposium to share your knowledge and experience through your papers, to contribute to discussions and to increase the spirits, and to emphasize the importance and size of geotechnics.

Symposium Themes

1. Geotechnical Investigation and Modeling

- In-Situ Tests
- Laboratory Tests
- Experimental and Numerical Modeling
- Soil Properties and Soil Behavior
- Soil Dynamics

2. Geotechnical Design

- Eurocode 7
- Turkish Building and Earthquake Code 2018
- Turkish Regulation for Earth Retaining Structures
- Geotechnical Structures
- Ground Improvement
- Geosynthetics
- Reinforcement of Geotechnical Structures

3. Geotechnical Disaster Analysis and Sustainability

- Geotechnical Earthquake Engineering
- Floods
- Environmental Geotechnics
- Landslides
- Geotechnical Risk Management
- Resilience

4. Soil-Structure Interaction

- Foundations
- Energy Geotechnics
- Coastal Structures
- Transportation Structures
- Dams
- Tunnels
- Underground Structures

5. Information Technologies in Geotechnical Engineering

- Instrumentation, Sensors and Detection Technologies in Geotechnical Engineering
- Monitoring Technologies in Geotechnical Engineering
- Building Information Modeling (BIM) in Geotechnical Engineering
- Artificial Intelligence in Geotechnical Engineering

Contact

UCTEA THE TURKISH CHAMBER OF CIVIL ENGINEERS ISTANBUL BRANCH
Tel. +90 212 293 20 00 (Ext. 117 - 111)
Email 9geoteknik@imo.org.tr



International Symposium on Innovations in Geotechnical Engineering towards Sustainability

November 30 - December 4, 2023, Hong Kong, China

<https://iges2023.github.io>

Building a sustainable society is becoming increasingly important. Geotechnical engineering, as a dynamic interface between human society and the earth system, can make significant contributions to developing innovative solutions for sustainable development. This symposium provides an excellent opportunity to showcase and promote innovations in geomechanics that facilitate energy-efficient, environment-friendly, resilient and sustainable geotechnical systems. We invite researchers and engineers interested in incorporating sustainability concepts into geotechnical engineering theory and practice. Interdisciplinary research that transcends traditional disciplinary boundaries and brings new insights into geotechnical engineering fields are welcome.

This workshop will take place at **Hong Kong** on **November 30 - December 4, 2023** in the offline mode. The two-day (December 1 - 2) scientific program at The Hong Kong Polytechnic University (PolyU) will include keynote lectures, invited lectures and parallel sessions. In addition, the symposium will organize two distinct field trips on December 3 - 4, allowing participants to explore Hong Kong's local attractions while fostering networking opportunities.

Themes

We invite researchers and engineers interested in incorporating sustainability concepts into geotechnical engineering theory and practice. Interdisciplinary research that transcends traditional disciplinary boundaries and brings new insights into geotechnical engineering fields are welcome.

The conference key themes are as follows:

- Properties of geomaterials & sustainable construction materials
- Constitutive modeling
- Advanced numerical approaches
- Smart geotechnical monitoring
- Big data and artificial intelligence in geotechnics
- Geo-energy engineering
- Geo-environmental engineering
- Geo-hazard assessment and mitigation
- Sustainability and resilience of infrastructures
- Tunnelling and underground space technology

Enquiries

For any questions, please contact us at:
Email: iges.2023dec@polyu.edu.hk
Tel: +852 2766 6025



1st SLRMES Conference on Rock Mechanics for Infrastructure and Geo-Resources Development - an ISRM Specialized Conference, Colombo, Sri Lanka, December 2-7, 2023, www.slrmes.org



**9th International Symposium on
Roller Compacted Concrete Dams and Cemented
Material Dams**
4th-8th December, 2023, Guangzhou, China
www.chincold-smart.com/meetings/rcc2023/index.html

Spanish National Committee on Large Dams (SPANCOLD), Japan Commission on Large Dams (JCOLD), French Committee on Large Dams (CFBR) and Chinese National Committee on Large Dams (CHINCOLD) have the honor to invite professionals to the 9th International Symposium on Roller Compacted Concrete (RCC) Dams and Cemented Material Dams (CMD), which will be held in Dec. 4th-8th, 2023 in Guangzhou City, China.

RCC dams have the virtues of saving a great deal of concrete, building quickly, making project cost down and early bringing into playing project advantages and so on. Hence, the technique of constructing dams has been quickly spread and applied since it came out. Today there are more than 400 RCC dams in more than 40 countries. Great successful experiences and advanced technologies have been achieved. CHINCOLD and SPANCOLD have devoted to promote the technology from early 1990's. The first Symposium on RCC dams was jointly organized by the two committees in 1991 in Beijing China, which was a success start of the series of RCC Symposiums.

Cemented Material Dam (CMD) is a new type of dams, which includes Hardfill dam, Cemented Sand and Gravel dam (CSG), Cemented Sand, Gravel and Rock dam (CSGR), Rock-filled Concrete dam (RCD), Cemented Soil dam (CSD), and so on. There are more than 200 CMD projects constructed and under construction.

Following those successful and fruitful Symposiums held in Beijing (China) in 1991, Santander (Spain) in 1995, Chengdu (China) in 1999, Madrid (Spain) in 2003, Zaragoza (Spain) in 2012 and Chengdu (China) in 2015, the 9th International Symposium on Roller Compacted Concrete (RCC) Dams and Cemented Material Dams will provide a platform for practitioners, engineers, researchers, scientists, managers and decision makers from all over the world to exchange ideas and technology about the latest developments dealing with RCC dams and CMDs. The participants will have the occasion to visit some famous RCC dams and CMDs in China in operation or under construction.

Topics

- Innovation and mix proportion of RCC Dams and CMDs materials
- Design and construction development of RCC Dams and CMDs
- Application of roller compacted concrete and cemented materials in the dam protection against overtopping
- Rehabilitation technology of RCC Dams and cases
- Application of digitization and artificial intelligence technology
- Others

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Registration online: <https://www.chincold-smart.com/meetings/rcc2023/createaccount-tianbaokeyi.html?i=0.24007252778697663>



GEOTEC HANOI 2023 The 5th International Conference on Geotechnics for Sustainable Infrastructure Development, December 14-15, 2023 - Hanoi, Vietnam, <https://geotechn.vn>

9th International Symposium on RCC Dams and CMDs December, 2023, Guangzhou, China, www.chincold-smart.com/meetings/rcc2023

ICSGE 16th International Conference on Structural and Geotechnical Engineering, 27 - 28 December 2-23, New Cairo, Egypt, <https://eng.asu.edu.eg/icsge>

ISGHS 2024 International Symposium on Geotechnical Aspects of Heritage Structures, 14-16 Feb 2024, Tiruchirappalli, India, www.isghs2024.in, www.igstrichy.org

IEMTA Southeast Asian Conference and Exhibition on Tunneling and Underground Space 2024 (SEACETUS2024), 05 - 07 March 2024, Kuala Lumpur, Malaysia, <https://submit.confdbay.com/conf/seacetus2024>





7th International Conference Series on Geotechnics, Civil Engineering and Structures (CIGOS 2024)

April 4-5, 2024, Ho Chi Minh City, Vietnam
<https://cigos2024.sciencesconf.org>

The International Conference series on Geotechnics, Civil Engineering and Structures (CIGOS) was initiated in 2010 in Paris and has certainly developed international reputations through its last six editions. CIGOS aims to provide a forum where academics, researchers, designers, and manufacturers can join to present, discuss and promote their professional and high-quality research knowledge and ideas.

The 7th edition, CIGOS 2024 co-organized by the Association of Vietnamese Scientists and Experts ([AVSE Global](#)) and the University of Architecture Ho Chi Minh City ([UAH](#)) under the auspices of [RILEM](#) and [TC-309 of ISSMGE](#), will take place in **Ho Chi Minh City, Vietnam** on **April 4 & 5, 2024**.

CIGOS 2024 welcomes the submission of quality papers from world-wide researchers, practitioners, policymakers and entrepreneurs with the most recent advances in various areas related to the theme of this conference: **"Advances in Planning, Architecture and Construction for Sustainable Development"**. The key goals of CIGOS 2024 are to promote an exchange of ideas, to foster beneficial economic partnership and technological transfers, and to also develop institutional research and education cooperations.

All submitted papers will be peer-reviewed by relevant experts in the international scientific committee of CIGOS 2024. Similar to [the previous 2017, 2019, and 2021 editions](#), the CIGOS 2024 proceedings will be edited and published in the most highly cited databases indexed in [Scopus](#).

The conference will cover a range of topics, including, but not limited to:

- *Planning, Architecture, Industrial Design (PAID)*
- *Construction, Materials, Structures, Digital Technologies (CMSDT)*
- *Geosciences, Environment, Energy (GEE)*
- *Transportation, Infrastructure, Management and Investment (TIMI)*

Contact person: cigos2024@sciencconf.org
Email: cigos2024@sciencconf.org



World Tunnel Congress 2024 19 to 25, April, 2024, Shenzhen China, www.wtc2024.cn

ICGE'24 International Conference of Geotechnical Engineering, April 25-27, 2024, Hammamet, Tunisia www.icge24.com

GEO AMERICAS 2024 5th Pan-American Conference on Geosynthetics Connecting State of the Art to State of Practice April 28 – May 1, 2024, Toronto, Canada, www.geoamericas2024.org

IFCEE 2024 International Foundation Congress and Equipment Expo, May 7-10, 2024, Dallas, USA
<https://web.cvent.com/event/c42dd622-dd91-409f-b249-2738e31c9ef5/summary>

8th International Conference on Earthquake Geotechnical Engineering (8ICEGE), 7-10 May, 2024 Osaka, Japan, <https://confit.atlas.jp/guide/event/icege8/top?lang=en>

GeoShanghai 2024 Interantional Conference on Geotechnical Engineering, May 26 – 29, 2024, Shanghai, China, www.geo-shanghai.org

2nd annual Conference on Foundation Decarbonization and Re-use, May 28-30 2024, Amsterdam, The Netherlands, <https://foundationreuse.com>

IS-Macau 2024 11th International Symposium of Geotechnical Aspects of Underground Construction in Soft Ground, June 14-17, 2024, Macao SAR, China, <https://is-macau2024.skli-otsc.um.edu.mo>

ISC'7 7th International Conference on Geotechnical and Geophysical Site Characterization "Ground models, from big data to engineering judgement", June 18-21, 2024, Barcelona, Spain, <https://isc7.cimne.com>



28th European Young Geotechnical Engineers Conference 2024

25 to 29 June 2024, Skopje, North Macedonia
<https://eygrec2024.net>

The Macedonian Association for Geotechnics (MAG) is organizing the 28th European Young Geotechnical Engineers Conference (EYGEC 2024) on 25-29.6.2024 in the town of Demir Kapija. The format of the event is such that all member societies of the ISSMGE from the European continent are invited to nominate prospective MSc and PhD study candidates, as well as young engineers, to present their work and gather valuable knowledge by close interaction with their peers from throughout Europe. Most of the participants of past EYGECs are now leading force in geotechnical engineering, not only in Europe. MAG is looking forward to welcoming all participants for a memorable EYGEC 2024.

Contact person: Ms. Elena Angelova
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Email: mag@gf.ukim.edu.mk
Website: <https://eygrec2024.net>



WCEE2024 18th World Conference on Earthquake Engineering, June 30 - July 5, 2024, Milan, Italy, www.wcee2024.it

WCEE2024 18th World Conference on Earthquake Engineering, June 30 - July 5, 2024, Milan, Italy, www.wcee2024.it / Session SHR-7: When science meets industry: advances in engineering seismology stemming from engineering practice, olga.ktenidou@gmail.com

3rd ICPE 2024 Third International Conference on Press-in Engineering, 3-5 July 2023, Singapore, <https://2024.icpe-ipa.org>

IS Landslides 2024 International Symposium on Landslides "Landslides across the scales: from the fundamentals to engineering applications" & IS Rock Slope Stability 2024, July 7-12th, 2024, Chambéry, France, www.isl2024.com

ICEC2024 SECOND INTERNATIONAL CONFERENCE ON EARTHEN CONSTRUCTION, 8-10 July 2024, Edinburgh, United Kingdom, <https://icec2024.eng.ed.ac.uk>, <https://icec2024.sciencesconf.org>

EUROCK 2024 ISRM European Rock Mechanics Symposium New challenges in rock mechanics and rock engineering July 15-19, 2024, Alicante, Spain, www.eurock2024.com

ECSMGE 24 XVIII European Conference on Soil Mechanics and Geotechnical Engineering, 26-30 August 2024, Lisbon, Portugal, www.ecsmge-2024.com

ISIC 2024 4th International Conference of International Society for Intelligent Construction, 10 - 12 September 2024, Orlando, United States, www.is-ic.org/conferences/2024-isic-international-conference

NGM 2024 19th Nordic Geotechnical Meeting, 18th - 20th of September 2024, Göteborg, Sweden, www.ngm2024.se

ISRM International Symposium 2024 and 13th Asian Rock Mechanics Symposium (ARMS13), 22 to 27 September 2024, New Delhi, India, <https://arms2024.org>

IS-Grenoble 2024 Geomechanics from Micro to Macro, September 23-27, 2024, Grenoble, France, <https://is-grenoble2024.sciencesconf.org>

- New facilities, new equipment, and measuring techniques
- Onshore and offshore foundation systems
- Geotechnical infrastructure
- Energy geo-structures and climate effects

The three-day conference will take place on the Deltares campus, which is a mere 10-minutes drive from the Delft city centre and within walking distance from TU Delft.

Contact

Please, contact the organisation committee here dr. Suzanne van Eekelen & dr. Miguel Cabrera organisation.ecpmg24@gmail.com



XVIII African Regional Conference on Soil Mechanics and Geotechnical Engineering, 06 ÷ 09 October 2024, Algiers, Algeria, <https://algeos-dz.com/18ARC.html>

RMCC2023 1st International Rock Mass Classification Conference "Rock Mass Classification meets the Challenges of the 21st Century", 30-31 October 2024, Oslo, Norway, www.rmcc2024.com

PANAMGEO CHILE 2024 17th Pan-American Conference on Soil Mechanics and Geotechnical Engineering, 12-17 November 2024, La Serena, Chile, <https://panamge-ochile2024.cl>

ICTG 2024 5th International Conference on Transportation Geotechnics 2024 "Sustainable and Evolving Technologies for Urban Transport Infrastructure", 20 - 22 November 2024, Sydney, Australia www.ictg2024.com.au



5th European Conference on Physical Modelling in Geotechnics

2 - 4 October 2024, Delft, Netherlands
<https://tc104-issmgm.com/ecpmg-2024>

Deltares and TU Delft are delighted to welcome you to the 5th European Conference on Physical Modelling in Geotechnics (ECPMG 2024) in the historic city of Delft, Netherlands, from 2nd to 4th October 2024

The conference aims to provide an up-to-date overview of the latest developments in multi-scale modelling within the following themes:

- Scaling principles and fundamentals



GeoMandu 2024

Geotechnics for Sustainable Infrastructure
28-29 November, 2024, Kathmandu, Nepal
<https://geomandu.ngeotechs.org>

As one of the most important branches of civil engineering, geotechnical engineering probably has the longest history of development. Some of the first geotechnical construction activities were traced back in the form of irrigation and flood control dykes, dams, and canals in ancient Egypt that were built as early as 2000 years ago. Up until the 18th century, however, all knowledge was limited to the form of an art than a science relying largely on past experiences. It was only in

the 19th century that geotechnical engineering started to build its theoretical basis. In about the past 200 years, this discipline has developed extensively; yet the basic theories and principles remain the same; what have changed in recent times are experimental techniques, advances in numerical modeling, and design standards. Today, the International Society for Soil Mechanics and Geotechnical Engineering ([ISSMGE](#)) brings together all geotechnical engineering professionals and researchers into a single forum and streamlines any further development of this discipline.

As a matter of fact, the gap in practicing geotechnical engineering principles between developed and developing nations is immensely wide. Many developing nations do not adequately consider geotechnical engineering design in infrastructure development and building construction. Nepal, for example, despite having established a national geotechnical society as well as producing geotechnical engineers through graduate programs, lacks proper geotechnical design guidelines for roads, bridges, and buildings. Natural hazards such as earthquakes, landslides, and floods, which frequently hit Nepal and are one of the major development hurdles in the country have also not been adequately studied and explored from geotechnical engineering perspectives. It is therefore important that the research and technological know-how the developed nations have developed is transferred to the practicing nations. As a disaster-prone country in the central Himalayas, Nepal particularly suffers from frequent landslides and floods on an annual basis, but the threat of earthquake disasters is far greater than the decades of landslide and flood disaster damages.

In a world marked by rapid urbanization, environmental challenges, and the ever-growing demand for infrastructure development, the role of geotechnical engineering has become increasingly pivotal. 'GeoMandu' seeks to address the pressing need for sustainable solutions in this dynamic landscape. It promises to be a platform for the global geotechnical community to converge, collaborate, and innovate, with the shared goal of shaping sustainable, resilient, and eco-friendly infrastructures for the future.

We plan to hold this conference series every two years. **GeoMandu**, the conference series name represents the international conference in the field of geotechnical engineering held in Kathmandu, the capital of Nepal. The conference theme will change every two years, and for the 'GeoMandu 2024' we have chosen "**Geotechnics for Sustainable Infrastructure**." It is scheduled to happen on **28-29 November, 2024** in **Kathmandu, Nepal**.

Conference Objectives

Primarily focusing on the theme geotechnics for sustainable infrastructure, this international conference is being held to meet the following objectives.

- Create a pool of minds for enhancing geotechnical engineering practices
- Provide a platform to share and disseminate information on recent developments in geotechnical engineering and geohazards.
- Create a platform to act as a whistleblower for the dire need of attention of the government institutions on importance of geotechnics towards development policy formulation.
- Appeal to the world geo-community the activities of Nepal Geotechnical Society and draw the world's attention to an intensified development of geotechnical engineering and geosciences in Nepal.
- Appeal to the government authorities of Nepal as well as all stakeholders the need of strengthening geotechnical

engineering design and construction guidelines in infrastructure development and construction activities.

All practicing and professional geotechnical engineers, civil engineers involved in geohazard research and exploration, engineering geologists, seismologists, geoscientists, geomorphologists, ground hydrologists, and other professionals and researchers working in the field of geo-infra disaster management.

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



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

The University Gustave Eiffel is pleased to invite participation in the 5th International Symposium on Frontiers in Offshore Geotechnics (ISFOG) to be held in Nantes, France, on June 9-13, 2025. ISFOG is now in its fifth event and fourth location following the most recent (2022) symposium in Austin, Texas and the first three symposia in Perth, Australia in 2005 and 2010 and Oslo, Norway in 2015.

The Symposium will be held under the auspices of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE) represented by the French Committee of Soil Mechanics (CFMS) and organised by a French Mirror Group of the Technical Committee TC 209. This group coordinates research and development actions in the field of offshore geotechnics in France.

ISFOG 2025 will highlight emerging technologies related to offshore renewables, in particular the move to floating wind farms, and focus on worldwide geotechnical challenges encountered by both the oil and gas and wind industries. The 7th Honorary McClelland lecture will be delivered by a prestigious speaker.

Themes

1. Frontier developments for offshore renewable energies
2. Site investigation strategies for fixed offshore windfarms and floating windfarms
3. Geohazards and integrated studies
4. Site characterization and ground modelling
5. Specific issues for carbonate soils, indurated soils and rocks, glauconite.
6. Design, standards, risk and reliability
7. Foundations for fixed wind turbines and platforms : mono-piles, piles, gravity bases, buckets, subsea structures, others
8. Anchoring systems : drag and plate anchors, suction anchors and caissons, anchor piles, torpedo piles, gravity anchors, prestressed anchors, mutualised anchor points
9. Pipelines, Risers and Cables
10. Trenching, ploughing, excavation and burial
11. Spudcans : penetration, extraction, interactions
12. Decommissioning of offshore facilities
13. Data Analytics & Machine Learning



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

Contact Person Name

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21st International Conference on
Soil Mechanics and Geotechnical Engineering
14 – 19 June 2026, Vienna, Austria

Organisers:

Austrian Geotechnical Society and Austrian Society for Geomechanics

Contact person: Prof. Helmut F. Schweiger

Email: helmut.schweiger@tugraz.at



16th International Congress on Rock Mechanics
Rock Mechanics and Rock Engineering
Across the Borders
17-23 October 2027, Seoul, Korea

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.

Landslides triggered by the 5 September 2022 Ms=6.8 Luding Earthquake in China



Google Earth imagery taken a few days after the 5 September 2022 Luding Earthquake, showing landslides triggered by the earthquake.

On 5 September 2022, Luding County in Sichuan Province, China was struck by a shallow (depth=16 km) Ms=6.8 earthquake. The area consists of steep mountain terrain, and the earthquake occurred at the end of the rainy season, so landslides were inevitable. In a new paper just published in the journal *Landslides*, [Ma et al. \(2023\)](#) provide an initial description of some of the landslides. The paper does not present a detailed inventory- that is likely to come later – but instead reports on reconnaissance work undertaken 15 days.

The epicentre of the earthquake was located at [102.08, 29.59]. The authors draw on their own work, and that of others, to indicate that at least 4,000 landslides were triggered by the earthquake. The image below shows part of the area affected, close to the epicentre. There is some Google Earth imagery available in this area taken a few days later, although with some cloud, but it does give a sense of the scale of the landslide impacts:-



Google Earth imagery taken a few days after the 5 September 2022 Luding Earthquake, showing landslides triggered by the earthquake.

This image is interesting – it appears to show multiple shallow, disrupted rockslides, a larger failures that has started from the ridgetop (which is typical of coseismic landslides) and the aftermath of a recent channelised debris flow, with a fan, down a major tributary channel.

Perhaps the most interesting aspect of this brief paper is an analysis of the fatalities associated with the Luding earthquake. [Ma et al. \(2023\)](#) report 93 deaths, with a further 25 people reported as missing. However, only 20% of the fatalities were caused by collapsing buildings, the other 80% were the result of landslides.

There are two other fascinating aspects of this study. First, the authors indicate that some remote villages, such as Wandong and Xingfu, remained cut off three weeks after the Luding Earthquake because of landslides. This illustrates the point that I have often made previously that in mountainous areas, landslides act as an impact multiplier, increasing the severity of the event by preventing rescues and hindering recovery. Second, [Ma et al. \(2023\)](#) note that “substantial loose deposited materials suspended at high slope position or in the valley in the Wandong and Xingfu areas, which will be one of the most serious problems in the recovery and reconstruction of the quake-affected area”.

Debris flows that remobilise material released by coseismic landslides are a major problem in an area such as this. These extend the impacts of the earthquake for years after the mainshock, with substantial impacts for the local population.

Reference

Ma, S., Lu, Y., Xia, C. et al. 2023 Brief report of landslides triggered by the 2022 Ms 6.8 Luding earthquake, Sichuan, China. [Landslides](#). <https://doi.org/10.1007/s10346-023-02156-x>

(Dave Petley / THE LANDSLIDE BLOG, 3 October 2023, <https://eos.org/thelandslideblog/luding-earthquake-1>)



The leaning tower of Bologna closes amid settlement concerns



The two towers of Bologna (image from [myadventuresacrosstheworld.com](#))

Bologna's leaning 48-meter tall Garisenda Tower was closed during the weekend, after worrying movement was monitored by scientists of the University of Bologna.

The Garisenda tower is part of the city's twin towers, with the 97.2-meter tall Asinelli Tower standing right next to it.

Construction of the twin towers took place between 1109 and 1119, at a time that Bologna resembled a mini-Manhattan with roughly 200 such towers standing tall in the city.

However, most of these structures were leveled during a period of reconstruction in the 1920s.

As for the Garisenda itself, the tower has historically been known to face geotechnical problems.

More specifically, the Italian poet Dante wrote about the tower's leaning in his work "Inferno", while it had to be lowered by approximately 10 meters during the 14th century amid concerns of collapse, due to yielding ground.

The Garisenda is currently leaning four degrees, which is slightly less than the Tower of Pisa's five-degree tilt.

A team of scientists from the University of Bologna has been monitoring the structure for the past five years, and they recently received concerning data regarding the tower's settlement, which has been attributed to its weak foundation.

In 2019, the Garisenda was fitted with steel bands, while grout was also injected into its foundations in 2022, trying to stabilize it.

Recently, the team of scientists received some worrying data concerning the structure's movement, leading to its closure during the weekend.

Very sensitive acoustic sensors and a pendulum were placed on site to track the tower's movement, while it was clarified that tapping off the area was not due to matters of public safety, but rather a means of minimizing noise pollution and obtaining better measurements.

However, it is worth noting that it is unclear if bus traffic will be allowed again near the tower.

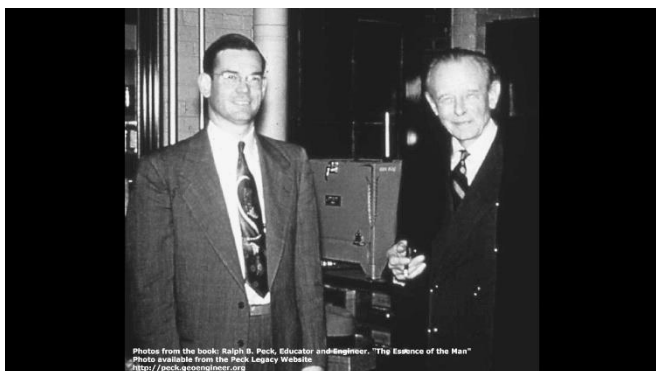
Finally, the area is going to reopen to the public on Friday, after the structure's oscillations have been recorded, and a €5 million budget from the government's EU funded National Recovery and Resilience Plan (NRRP) was announced to be allocated to the tower's rehabilitation.

Sources: edition.cnn.com, www.euronews.com, www.dailymail.co.uk

(Geoengineer.org, Oct, 21, 2023, <https://www.geoengineer.org/news/the-leaning-tower-of-bologna-closed-amid-settlement-concerns>)



Audio recording of Terzaghi's opening lecture for Engineering Geology at Harvard University and Ralph B. Peck's special lecture



<https://www.youtube.com/watch?v=6L5jXa6bLBg>

We are very happy to share with you a rare tape, which includes recordings of Karl von Terzaghi and Ralph Peck.

The introduction was recorded by Dr. Ralph B. Peck at his home in Urbana, Illinois on August 20, 1965.

Prof. Karl Terzaghi's opening lecture was recorded at Harvard University by Arthur Casagrande on February 4, 1957.

The third part is a recording of Dr. Peck's special lecture at the ninth international conference on soil mechanics and foundation engineering in Tokyo, 1977.

This tape was given by Dr. Peck to Toshinobu Akagi, whose wish was to publicize this priceless heritage with the hope that "this audio heritage brings moments of reflection to all concerned and serves to provide a better understanding of a vignette of Karl Terzaghi, the Father of Soil Mechanics, which is apparently not known well enough, but is no doubt of vital importance for the future of soil mechanics and geotechnical engineering."

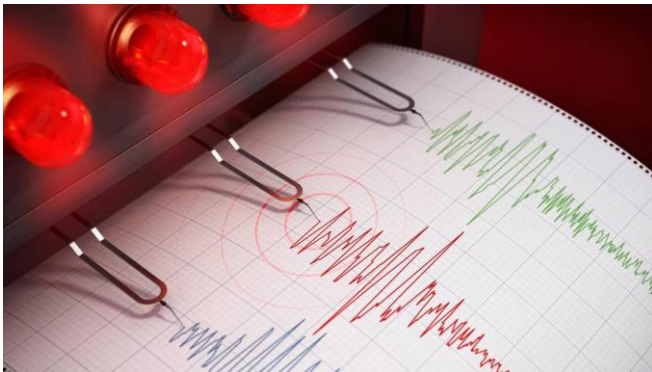
More information about the recording can be found in the paper "[I can hear it now - Terzaghi and Peck](#)" by Toshinobu Akagi.

Geoengineer.org staff helped improve the quality of the recording.

(<https://www.geoengineer.org/education/karl-terzaghi/terzaghis-opening-lecture-for-engineering-geology-at-harvard-university-and-ralph-b-pecks-special-lecture>)

ΕΝΔΙΑΦΕΡΟΝΤΑ - ΣΕΙΣΜΟΙ & ΑΝΤΙΣΕΙΣΜΙΚΗ ΜΗΧΑΝΙΚΗ

AI predicts 70% of earthquakes a week before they occur



Representational image of seismographic activity ([ad-ventr/iStock](#))

High precision and accuracy in earthquake prediction continues to be a key scientific challenge, and artificial intelligence (AI) has been investigated as a technique to enhance our capabilities in this crucial area.

This is because AI can analyze large datasets of seismic activity and identify patterns or anomalies that human analysts might miss. Machine learning algorithms can thus help researchers understand earthquake patterns better.

A high degree of probability

Today, some AI models are used to predict earthquakes with a high degree of probability by examining geological features and previous seismic data. These models calculate the probability of earthquakes happening in particular areas over a given period of time. However, these forecasts are typically too generic to account for precise predictions.

It's crucial to realize that predicting earthquakes is a challenging task since earthquakes are caused by the movement of tectonic plates deep within the Earth's crust, a process that involves a variety of variables and uncertainties. Even though AI can help with analyzing earthquake-related data and enhancing early warning systems, accurately forecasting the precise timing, position, and magnitude of an earthquake is still a difficult process.

This may soon change. Researchers at The University of Texas (UT) at Austin [tested](#) an AI algorithm that accurately predicted 70 percent of earthquakes a week before they happened. The trials took place during a seven month period in China and offered much hope that a reliable AI system for predicting earthquakes may finally be available.

"Predicting earthquakes is the holy grail," said Sergey Fomel, a professor in UT's Bureau of Economic Geology and a member of the research team. "We're not yet close to making predictions for anywhere in the world, but what we achieved tells us that what we thought was an impossible problem is solvable in principle."

The AI system was found to predict the location of 14 earthquakes within about 200 miles of where they actually occurred and at almost exactly the calculated strength. The system only flagged eight false warnings and missed one earthquake.

Preparing for earthquakes

"You don't see earthquakes coming," said Alexandros Savvaidis, a senior research scientist who leads the bureau's Texas Seismological Network Program (TexNet) — the state's seismic network.

"It's a matter of milliseconds, and the only thing you can control is how prepared you are. Even with 70 percent, that's a huge result and could help minimize economic and human losses and has the potential to dramatically improve earthquake preparedness worldwide."

The researchers now want to trial their model in regions with strong seismic activity such as California, Italy, Japan, Greece, Turkey and Texas. Training on this much data would allow the model to improve its date predicting accuracy rate and narrow its location estimates to within a few tens of miles of the actual earthquake center.

As a next step, the AI will be tested in Texas taking advantage of the bureau's TexNet data which has compiled information from over 300 seismic stations and more than six years of continuous records.

Related

- [New AI system to help save lives of earthquake survivors in Turkey](#)
- [Researchers now may detect earthquakes 2 days before, with 80% accuracy](#)
- [New GPS study shows promise for 2-hour earthquake prediction signal](#)

(Loukia Papadopoulos / INTERESTING ENGINEERING, Oct 07, 2023, <https://interestingengineering.com/innovation/ai-predicts-70-of-earthquakes-a-week-before-they-occur>)



Quantitative Earthquake Loss Estimates the New Frontier

In a new [#SRL](#) editorial, [Max Wyss](#) of the International Centre for Earth Simulation (ICES) Foundation says that estimating earthquake fatalities, injuries and financial loss may be the most important questions in seismology today. What's the way forward? <https://buff.ly/3QqpNle>

Abstract

Since 2003, an early focus has emerged on estimating earthquake fatalities, injuries, and financial losses. This new inquiry is not yet practiced by a majority of researchers, even though one might argue it is the most important question in seismology today. No sensitive structures like reservoir dams and nuclear power plants could be built without a detailed seismic hazard analysis specifically focused on the site. On the other hand, cities near large active faults do not have their building codes determined by rigorous and specific seismic hazard and risk analyses. This contrast is startling. It seems that where mostly money is at stake, it is mandatory to consider deterministic seismic hazard analyses for construction, whereas where mostly lives are at stake, it is not. I advocate that it should be mandatory for every major city

near active faults to have the seismic hazard and risk estimated so as to put an adequate local building code and other safety measures in place. To this end, a standard procedure should be defined to assess local earthquake risk in populated areas exposed to earthquake hazards. In numerous countries, the population numbers in villages, as well as the locations and sizes of schools and hospitals, are not known, and some governments refuse to distribute this information, in spite of the fact that it would be for humanitarian purposes.

Because the Open Street Map and Open Building Map begin to cover the globe, this missing information, essential for first responders in natural disasters, will become available and will contribute to preparing populations at risk to reduce the impact of unavoidable future earthquakes.

Seismological Research Letters (2023),
<https://doi.org/10.1785/0220230192>

TABLE 1

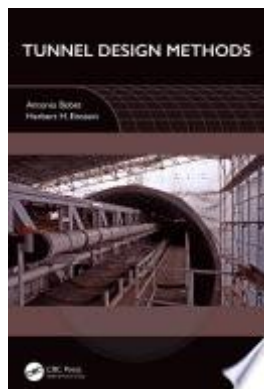
List of the Sum of Fatalities and Numbers of Fatal Earthquakes in the 20 Countries with the Highest Number of Fatalities Reported for the Time Interval Given in the Last Two Columns

| Fatalities Rank | Country | Fatalities | N (Quakes) | MinYr | MaxYr |
|-----------------|------------|------------|------------|----------|-------|
| 1 | China | 2,374,124 | 416 | 186 B.C. | 2021 |
| 2 | Türkiye | 1,595,900 | 247 | 360 B.C. | 2020 |
| 3 | Iran | 807,301 | 209 | 662 | 2021 |
| 4 | Syria | 439,284 | 15 | 844 | 1796 |
| 5 | Italy | 422,356 | 242 | 51 | 2017 |
| 6 | Azerbaijan | 337,314 | 11 | 1139 | 2018 |
| 7 | Haiti | 323,280 | 8 | 1842 | 2022 |
| 8 | Japan | 271,172 | 145 | 830 | 2022 |
| 9 | Greece | 172,152 | 172 | 550 B.C. | 2021 |
| 10 | Egypt | 163,671 | 12 | 33 B.C. | 1995 |
| 11 | Pakistan | 145,286 | 35 | 1827 | 2021 |
| 12 | Ecuador | 135,053 | 33 | 1640 | 2019 |
| 13 | Israel | 130,000 | 5 | 856 B.C. | 1838 |
| 14 | Peru | 90,375 | 89 | 1586 | 2021 |
| 15 | Portugal | 88,819 | 16 | 1151 | 1998 |
| 16 | Iraq | 86,200 | 6 | 845 | 1991 |
| 17 | Armenia | 78,990 | 7 | 735 | 1988 |
| 18 | India | 61,750 | 42 | 1618 | 2021 |
| 19 | Chile | 60,109 | 57 | 1575 | 2019 |
| 20 | Tunisia | 48,013 | 3 | 856 | 1957 |

N means the number of quakes, and MinYr and MaxYr indicate the temporal extent of the data.

<https://pubs.geoscienceworld.org/ssa/srl/article-abstract/doi/10.1785/0220230192/628104/Quantitative-Earthquake-Loss-Estimates-the-New>

ΝΕΕΣ ΕΚΔΟΣΕΙΣ ΣΤΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΠΙΣΤΗΜΕΣ



Tunnel Design Methods

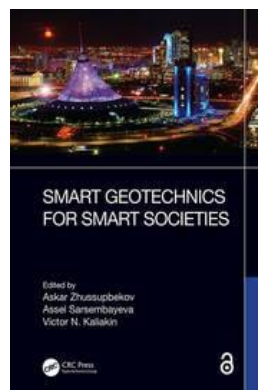
Antonio Bobet, Herbert H. Einstein

Tunnel Design Methods covers analytical, numerical, and empirical methods for the design of tunnels in soil and in rock. The material is intended for design engineers looking for detailed methods, for graduate students who are interested in tunnelling, and for researchers working on various aspects of ground-support interaction under static and seismic loading.

The book is divided into seven chapters, covering fundamental concepts on ground and support behavior and on ground-excavation-support interaction and provides detailed information on analytical and numerical methods used for the design of tunnels, with applications, and on the latest developments on empirical methods. The principles and formulations included are used, throughout the book, to provide insight into the response of tunnels under both simple and complex loading conditions, thus providing the reader with fundamental understanding of tunnel behavior.

Both authors have experience in tunnelling and have worked extensively in practice, designing tunnels both in the United States and abroad, and in research.

(CRC Press, 12 Sep 2023)



Smart Geotechnics for Smart Societies

**Proceedings of the
17th Asian Regional
Conference on Soil Mechanics
and Geotechnical Engineering
(17th ARC, Astana,
Kazakhstan, 14-18 August,
2023)**

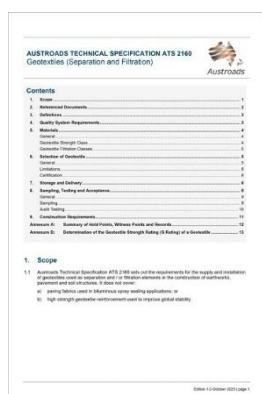
**Edited by Askar Zhussupbekov, Assel Sarsembayeva,
Victor N. Kaliakin**

Smart Geotechnics for Smart Societies contains the contributions presented at the 17th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering (17th ARC, Astana, Kazakhstan, 14-18 August, 2023). The topics covered include:

- Geomaterials for soil improvement
- Tunneling and rock engineering
- Slope, embankments and dams
- Shallow and deep foundations
- Soil dynamics and geotechnical earthquake engineering
- Geoenvironmental engineering and frost geotechnics
- Investigation of foundations of historical structures and monitoring
- Offshore, harbor geotechnics and GeoEnergy
- Megaprojects and transportation geotechnics

Smart Geotechnics for Smart Societies will be of interest to academics and engineers interested or involved in geotechnical engineering.

(CRC Press 2023, eBook Published 4 August 2023)



Geotextiles (Separation and Filtration)

Austroads Technical Specification ATS 2160 sets out the requirements for the supply and installation of geotextiles used as separation and / or filtration elements in the construction of earthworks, pavement and soil structures.

The technical specification can also be downloaded as a [Word document](#).

(Publication no: ATS-2160-23, 30 October 2023)

ΗΛΕΚΤΡΟΝΙΚΑ ΠΕΡΙΟΔΙΚΑ



www.issmge.org/publications/issmge-bulletin/vol-17-issue-4-october-20230

Κυκλοφόρησε το Τεύχος 4 του Τόμου 17 του ISSMGE Bulletin Οκτωβρίου 2023 με τα ακόλουθα περιεχόμενα:

- **Conference reports**
 - The 17th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering (17ARC), Kazakhstan
 - The 4th International Symposium on Machine Learning and Big Data in Geoscience (ISMLG 2023), Ireland
 - XX Technical Dam Control International Conference, Poland
- **ISSMGE Foundation reports**
- **Event Diary**
- **Corporate Associates**
- **Foundation Donors**



IGS NEWSLETTER – October 2023

Κυκλοφόρησε το IGS Newsletter της International Geosynthetic Society με τα ακόλουθα περιεχόμενα:

Helping the world understand the appropriate value and use of geosynthetics

www.geosyntheticssociety.org/newsletters

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- IGS Launches Sustainability Benefits Calculator [READ MORE](#)
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- Students And Industry Forge Links At IGS Brazil Conference [READ MORE](#)
- Geotextiles And Geomembranes: Best Papers For 2022 Announced [READ MORE](#)
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Κυκλοφόρησε το Τεύχος 5 του Τόμου 30 (Οκτωβρίου 2023) του Geosynthetic International της International Geosynthetic Society με τα ακόλουθα περιεχόμενα:

Announcement

[Best Geosynthetic International Paper for 2022, R. J. Bathurst](#), 30(5), p. 449

Papers

[Repairing expansive soil channel slope with soilbags](#), S. Liu, C. Gao, K. Fan, C. Zhang, Z. Wang, C. Shen, Z. Han, 30(5), pp. 450–459

[Measurement methodology and characteristics of interfacial resistance in electro-osmosis](#), K.-S. Guo, Y.-F. Zhuang, 30(5), pp. 460–468

[Seismic performance of near-fault geosynthetic-reinforced pile-supported embankment](#), W. Guo, X. Wang, C. He, L. Jiang, Y. Long, Z. Guo, Q. Yan, L. Zhao, Y. Lin, 30(5), pp. 469–479

[Stresses and strains in a flexible pipe buried in geosynthetic reinforced soil](#), E. M. Palmeira, A. C. G. Pires, 30(5), pp. 480–491

[DEM investigation of shear mobilisation during tyre strip pull-out test](#), Z.-L. Ren, Y. P. Cheng, X. Xu, L. Li, 30(5), pp. 492–505

[Consolidation of soft soils improved by composite piles considering clogging effect](#), J. Shan, M. Lu, K. Yang, 30(5), pp. 506–520

[Gas permeability of geosynthetic clay liners overlap seams](#), Q. Wang, A. Bouazza, H. Xie, 30(5), pp. 521–528

[Effects of freeze-thaw cycles on the properties of polyethylene geomembranes](#), R. F. M. Rarison, M. Mbonimpa, B. Bussi re, 30(5), pp. 529–544

[Large-scale model test studies on a double-layer rubber dam](#), X. Gao, W. Guo, W. F. Guo, Y. X. Ren, L. Dai, 30(5), pp. 545–560



www.sciencedirect.com/journal/geotextiles-and-geomembranes/vol/51/issue/5

Κυκλοφόρησε το Τεύχος 5 του Τόμου 51 (Οκτωβρίου 2023) του Geotextiles and Geomembranes της International Geosynthetic Society με τα ακόλουθα περιεχόμενα:

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[Uncertainties in determining the responses of reinforced flexible pavements using in-situ tests](#), Jianfeng Xue, Chaminda Gallage, Hangyu Qiu, Jinjiang Zhong, Anthony Southon, Pages 17–26

[Degradation of HDPE, LLDPE, and blended polyethylene geomembranes in extremely low and high pH mining solutions at 85 °C](#), F.B. Abdelaal, R. Kerry Rowe, M.S. Morsy, R.A. e Silva, Pages 27–38

[Rational design method for bituminous pavements reinforced by geogrid](#), Reuber Freire, Herv  Di Benedetto, C dric Sauz at, Simon Pouget, Didier Lesueur, Pages 39–52

[Quantification of geogrid lateral restraint using transparent sand and deep learning-based image segmentation](#), David H. Marx, Krishna Kumar, Jorge G. Zornberg, Pages 53–69

[New approach to junction efficiency analysis of hexagonal geogrid using digital image correlation method](#), Jaros aw G rszczyk, Konrad Malicki, Pages 70–80

[Experimental study of a 3D printed geogrid embedded with FBG sensor for reinforcement of subgrade with underlying cave](#), Mengxi Zhang, Hao Zhu, Jie Yang, Chengchun Qiu, Akbar A. Javadi, Pages 81–92

[Hydrodynamic assessment of bentonite granule size and granule swelling on hydraulic conductivity of geosynthetic clay liners](#), Juan Hou, Rui Sun, Craig H. Benson, Pages 93–103

[Recycling dredged mud slurry using vacuum-solidification combined method with sustainable alkali-activated binder](#),

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[Prediction of non-woven geotextiles' reduction factors for damage caused by the drop of backfill materials](#), Mateus P. Fleury, Gustavo K. Kamakura, Cira S. Pitombo, Andr  Luiz B.N. Cunha, Jefferson Lins da Silva, Pages 120–130

[Hydraulic design of granular and geocomposite drainage layers in pavements based on demand-capacity modeling](#), Shubham A. Kalore, G.L. Sivakumar Babu, Pages 131–143

[Morphological insights into the liquefaction and post-liquefaction response of sands with geotextile inclusions using drained constant volume simple shear tests](#), Balaji Lakkimsetti, Gali Madhavi Latha, Pages 144–164

[Experimental study on the load bearing behavior of geosynthetic reinforced soil bridge abutments on yielding foundation](#), Jialong Deng, Jun Zhang, Ziwen Qi, Yewei Zheng, Junjie Zheng, Pages 165–178

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