



Ικαρία. Κανόνι...  
(Γιάννης Τούντας)



ΕΛΛΗΝΙΚΗ  
ΕΠΙΣΤΗΜΟΝΙΚΗ  
ΕΤΑΙΡΕΙΑ  
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ  
& ΓΕΩΤΕΧΝΙΚΗΣ  
ΜΗΧΑΝΙΚΗΣ

# Τα Νέα

60

## της Ε Ε Ε Ε Γ Μ

1<sup>η</sup> Ανακοίνωση

### 7<sup>ο</sup> Πανελλήνιο Συνέδριο Γεωμηχανικής Αθήνα, Νοέμβριος 2014

Η Ελληνική Επιστημονική Εταιρεία Εδαφομηχανικής και Γεωτεχνικής Μηχανικής διοργανώνει το 7<sup>ο</sup> Πανελλήνιο Συνέδριο Γεωμηχανικής υπό την αιγίδα του Τεχνικού Επιμελητηρίου Ελλάδας. Στόχος του συνεδρίου είναι να αποτελέσει ένα βήμα ενημέρωσης και διαλόγου για τη γεωμηχανική πράξη και την έρευνα κυρίως στην Ελλάδα.

Η θεματολογία του συνεδρίου περιλαμβάνει κάθε πλευρά της γεωμηχανικής, όπως:

- Θέματα θεωρίας, έρευνας και πειράματος σχετικά με τη συμπεριφορά γεωυλικών, όπως συμπεριφορά εδαφικών, ημιβραχωδών και βραχωδών υλικών, έρευνες υπαίθρου και εργαστηρίου, ανάπτυξη και εφαρμογή πιθανοτικών και υπολογιστικών μεθοδολογιών στη γεωμηχανική, εδαφοδυναμική - βραχοδυναμική, γεωτεχνική σεισμική μηχανική.
- Θεωρητικά ή πρακτικά θέματα σχετικά με έργα γεωμηχανικής, δηλαδή έργα της κύριας αρμοδιότητας του γεωμηχανικού, όπως ευστάθεια πρανών, κατολισθήσεις, βελτιώσεις και ενισχύσεις εδαφών.
- Θεωρητικά ή πρακτικά θέματα γεωμηχανικής σχετικά με έργα στα οποία συμβάλλουν περισσότερες ειδικότητες μηχανικών, όπως θεμελιώσεις, βαθιές εκσκαφές και αντιστηρίξεις, σήραγγες και υπόγεια έργα, οδοστρώματα, επιχώματα, φράγματα, γεωπεριβαλλοντικά έργα, μικροζωνικές μελέτες.

Αρ. 60 – ΑΥΓΟΥΣΤΟΣ 2013



(συνέχεια στην σελ.3)

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(συνέχεια από την πρώτη σελίδα)

- Διεπιφάνειες της γεωμηχανικής με άλλες επιστημονικές θεματικές περιοχές, όπως διδασκαλία και μάθηση, διασφάλιση ποιότητας, τυποποίηση και ορολογία, τεχνικά θέματα σχετικά με την ιστορική εξέλιξη της γεωμηχανικής.

Ιδιαίτερα ενθαρρύνεται η υποβολή άρθρων με τα εξής θέματα:

- Γεωτεχνικές πλευρές έργων ενεργειακής υποδομής
- Συνδυασμένος στατικός και γεωτεχνικός σχεδιασμός σύμφωνα με τον Ευρωκώδικα
- Περιστατικά κατάλληλα για τη διδασκαλία της γεωμηχανικής (βλέπε και παράλληλη ανακοίνωση για το σχετικό βραβείο).

Τα άρθρα του συνεδρίου θα περάσουν από κρίση περίληψης και πλήρους κειμένου με τις πιο κάτω προθεσμίες:

Υποβολή περίληψης:	15 Νοεμβρίου 2013
Ειδοποίηση αποδοχής περίληψης:	15 Δεκεμβρίου 2013
Υποβολή πλήρους κειμένου:	15 Μαρτίου 2014
Αποστολή σχολίων:	15 Μαΐου 2014
Υποβολή διορθωμένου κειμένου:	15 Ιουλίου 2014
Ειδοποίηση αποδοχής άρθρου:	15 Σεπτεμβρίου 2014

Το κόστος εγγραφής είναι 150 ευρώ έως τις 30 Σεπτεμβρίου 2014. Για νέους μηχανικούς (νεώτερους των 30 ετών) και φοιτητές το κόστος είναι 80 και 30 ευρώ, αντίστοιχα. Μετά τις 30 Σεπτεμβρίου 2014, το κόστος προσαυξάνεται κατά 30 ευρώ, για κάθε κατηγορία. Το κόστος εγγραφής καλύπτει το CD με τα πρακτικά του συνεδρίου, δεξίωση και καφέ στα διαλείμματα.



## **ΠΡΟΣΚΛΗΣΗ** **ΤΑΚΤΙΚΗΣ ΓΕΝΙΚΗΣ ΣΥΝΕΛΕΥΣΗΣ -** **ΚΑΤΑΣΤΑΤΙΚΗΣ**

Αθήνα 7  
Αυγούστου 2013

Καλούνται τα μέλη της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής να προσέλθουν στη Γενική και Καταστατική Συνέλευση που θα γίνει την Πέμπτη 12 Σεπτεμβρίου 2013 και ώρα 7.00 μ.μ. στην Αίθουσα Εκδηλώσεων της Σχολής Πολιτικών Μηχανικών Ε.Μ.Π. στην Πολυτεχνειούπολη Ζωγράφου.

Σε περίπτωση που δεν επιτευχθεί η απαιτούμενη απαρτία, η Γενική Συνέλευση θα γίνει την Πέμπτη 3 Οκτωβρίου 2013 στον ίδιο χώρο και χρόνο, εφ' όσον υπάρξει απαρτία με συμμετοχή του ¼ των μελών που έχουν εκπληρώσει τις οικονομικές τους υποχρεώσεις (μέχρι και το 2012) προς την ΕΕΕΕΓΜ.

Σε περίπτωση που δεν επιτευχθεί πάλι απαρτία, η Γενική Συνέλευση θα γίνει την **24<sup>η</sup> Οκτωβρίου, ημέρα Πέμπτη και ώρα 6.00 μ.μ.** στον ίδιο χώρο, οσαδήποτε οικονομικώς ως άνω ενήμερα μέλη και αν είναι παρόντα.

Τα θέματα της ημερήσιας διάταξης είναι :

1. Απολογισμός πεπραγμένων της Εκτελεστικής Επιτροπής από την τελευταία Γενική Συνέλευση της 8<sup>ης</sup> Μαΐου 2012 μέχρι σήμερα.

2. Οικονομικός απολογισμός έτους 2012.
3. Έκθεση Εξελεγκτικής Επιτροπής.
4. Έγκριση απολογισμού πεπραγμένων και οικονομικών απολογισμών και απαλλαγή της Εκτελεστικής Επιτροπής από κάθε ευθύνη.
5. Διάφορες ανακοινώσεις.
6. Συζήτηση επί των προτεινομένων αλλαγών στο Καταστατικό που αφορούν στην αλλαγή του ονόματος της Εταιρείας και στην συγκρότηση Σώματος Κοσμητόρων.
7. Έγκριση προτεινομένων αλλαγών στο Καταστατικό.

Ο ΠΡΟΕΔΡΟΣ

Η ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΑΣ

ΧΡΗΣΤΟΣ ΤΣΑΤΣΑΝΙΦΟΣ  
Δρ. Πολιτικός Μηχανικός

MARINA ΠΑΝΤΑΖΙΔΟΥ  
Δρ. Πολιτικός Μηχανικός

### **ΠΡΟΤΑΣΕΙΣ ΑΛΛΑΓΩΝ ΚΑΤΑΣΤΑΤΙΚΟΥ Ε.Ε.Ε.Γ.Μ.**

1. Το Άρθρο 1<sup>ο</sup> γίνεται:

#### **Άρθρο 1<sup>ο</sup>** **ΕΠΩΝΥΜΙΑ – ΕΔΡΑ**

Συνιστάται επιστημονικό μη κερδοσκοπικό Σωματείο με την επωνυμία «**Ελληνική Επιστημονική Εταιρεία Γεωμηχανικής (Ε.Ε.Ε.Γ.)**», αγγλιστί «**Hellenic Society of Geomechanics**», ως Εθνική Εταιρεία – Μέλος της Διεθνούς Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής (International Society of Soil Mechanics and Geotechnical Engineering, ISSMGE) και της Διεθνούς Εταιρείας Βραχομηχανικής (International Society for Rock Mechanics, ISRM).

Έδρα της **Ελληνικής Επιστημονικής Εταιρείας Γεωμηχανικής** είναι η Αθήνα.

Το γραφείο της Γραμματείας της και η αίθουσα συνεδριάσεων στεγάζονται στα κτίρια του Τομέα Γεωτεχνικής του Εθνικού Μετσόβιου Πολυτεχνείου. Η στέγαση του γραφείου της Γραμματείας και η αίθουσα συνεδριάσεων μπορούν να αλλάζουν με απλή απόφαση της Εκτελεστικής Επιτροπής.

2. Όπου στο Καταστατικό αναφέρεται η επωνυμία της εταιρείας, αυτή τροποποιείται σε «**Ελληνική Επιστημονική Εταιρεία Γεωμηχανικής**». Επίσης το αρκτικόλεξο Ε.Ε.Ε.Γ.Μ. αντικαθίσταται με το **Ε.Ε.Ε.Γ.**

3. Προστίθεται Άρθρο 15<sup>ο</sup>:

#### **Άρθρο 15<sup>ο</sup>** **ΣΩΜΑ ΚΟΣΜΗΤΟΡΩΝ**

Οι **διατελέσαντες Πρόεδροι και Γενικοί Γραμματείς** της ΕΕΕΓ συγκροτούν μόνιμο Σώμα Κοσμητόρων. Έργο του Σώματος Κοσμητόρων θα είναι η **παροχή συμβουλευτικής γνώμης** σε θέματα τα οποία θα θέτει υπ' όψη του η Εκτελεστική Επιτροπή.

4. Η αρίθμηση των υφισταμένων μετά το νέο Άρθρο 15<sup>ο</sup> μεταβάλλεται ως ακολούθως:

Το Άρθρο 15<sup>ο</sup> ΣΥΝΔΡΟΜΕΣ ΜΕΛΩΝ λαμβάνει τον αριθμό 16.

Το Άρθρο 16<sup>ο</sup> ΠΟΡΟΙ ΤΗΣ ΕΤΑΙΡΕΙΑΣ λαμβάνει τον αριθμό 17.

Το Άρθρο 17<sup>ο</sup> λαμβάνει τον αριθμό 18.

Το Άρθρο 18<sup>ο</sup> ΔΙΑΛΥΣΗ ΤΗΣ ΕΤΑΙΡΕΙΑΣ λαμβάνει τον αριθμό 19.

# ΑΝΑΚΟΙΝΩΣΗ ΔΙΑΛΕΞΗΣ

## ΔΙΑΛΕΞΗ

**την Δευτέρα, 16 Σεπτεμβρίου 2013,  
ώρα 18:00**

στην Αίθουσα Εκδηλώσεων της  
Σχολής Πολιτικών Μηχανικών  
στην Πολυτεχνειούπολη Ζωγράφου

### «ENERGY GEOTECHNOLOGY

### **The Role of Geotechnical Engineers in the Energy Challenge»**

από τον

**Carlos J. SANTAMARINA**

**Δρ. Πολιτικό Μηχανικό**

Professor of  
Civil and Environmental Engineering  
Goizueta Foundation Faculty Chair  
Georgia Institute of Technology, Atlanta

Η ίδια διάλεξη θα παρουσιασθή την  
Τρίτη 17 Σεπτεμβρίου 2013 στην  
Πολυτεχνική Σχολή  
του Αριστοτελείου Πανεπιστημίου Θεσσαλο-  
νίκης

## ΠΕΡΙΛΗΨΗ ΔΙΑΛΕΞΗΣ

Energy and growth are intimately related. There will be a pronounced increase in energy demand in the next decades associated to economical development and population growth worldwide. This situation will exacerbate current issues related to the spatial distributions of supply and demand, the dependency on fossil fuels and its environmental consequences. Geotechnology is at the center of the energy challenge, from production, transportation, consumption and conservation, to waste management and carbon sequestration. Phenomena involved in energy geotechnology often relate to classical topics in our field. Hydraulic fracturing is essentially a geotechnical process. Fines migration and formation damage in oil and gas recovery are akin to filter criteria and clogging, while oil and gas recovery and CO<sub>2</sub> storage are in effect unsaturated soil mechanics and mixed fluid flow problems. Further, hydrate-bearing sediments have many common features with frozen ground engineering, the analysis of geothermal piles must consider thermal consolidation, fly ash impoundments can experience static liquefaction, and reactive fluid transport following CO<sub>2</sub> injection and water acidification parallels karst for-

mation. There are other energy-related geo-phenomena that push our classical boundaries. Typically, they involve coupled hydro-thermo-chemo-bio-mechanical processes such as the design of nuclear waste repositories, emergent phenomena such as various forms of localizations, and spatial variability inherent to large-scale field projects.

## ΣΥΝΤΟΜΟ ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ ΟΜΙΛΗΤΗ

Santamarina and his team explore the scientific foundations of soil behavior and subsurface processes using innovative particle-level and pore-scale testing methods, combined with numerical methods and high-resolution process monitoring systems. This conceptual and experimental framework is used to advance the study of phenomena and the development of solutions in energy geotechnology with contributions to: efficiency and conservation, resource recovery (petroleum, methane hydrates), energy geo-storage, and energy waste (carbon geological storage, fly ash and nuclear waste). Two books and more than 250 publications summarize salient concepts and research results. His former doctoral students are faculty members or lead engineers at foremost universities and organizations worldwide. Dr. Santamarina is a frequent keynote speaker at international events, a member of both Argentinean National Academies, and a member of committees at the USA National Academies. He holds a Ph.D. from Purdue University, M.S. from the University of Maryland and BSc from Universidad de Cordoba.

# ΠΡΟΚΗΡΥΞΕΙΣ ΔΙΑΓΩΝΙΣΜΩΝ ΑΠΟ ΤΗΝ ΕΕΕΕΓΜ

## ΠΡΟΚΗΡΥΞΗ ΔΙΑΓΩΝΙΣΜΟΥ ΓΙΑ ΤΗΝ ΒΡΑΒΕΥΣΗ ΣΥΓΓΡΑΦΕΩΝ ΠΕΡΙΣΤΑΤΙΚΩΝ ΚΑΤΑΛΛΗΛΩΝ ΓΙΑ ΔΙΔΑΣΚΑΛΙΑ

Η ΕΕΕΕΓΜ προκηρύσσει διαγωνισμό για την συγγραφή περιστατικών από την πράξη, κατάλληλων παρουσιασμένων για να χρησιμοποιηθούν στη διδασκαλία.

Ο διαγωνισμός στοχεύει στη συνέργεια μεταξύ πανεπιστημίων και ιδιωτικού τομέα, καθώς αναμένεται ότι η συνεργασία αυτή θα βοηθήσει την κάθε ομάδα να κατανοήσει καλύτερα τις ανάγκες της άλλης, συμβάλλοντας έτσι στην αντιμετώπισή τους.

Η χρησιμότητα των περιστατικών (case studies) έχει αναγνωριστεί ευρέως στην γεωμηχανική, χωρίς να γίνεται διάκριση μεταξύ περιστατικών χρήσιμων για την πράξη ή για την διδασκαλία (Rogers, 2008). Οι διδάσκοντες της γεωμηχανικής, όμως, γνωρίζουν ότι ένα ενδιαφέρον περιστατικό δεν μπορεί πάντα να χρησιμοποιηθεί στη διδασκαλία. Η βράβευση περιστατικών κατάλληλων για διδασκαλία αποσκοπεί στο να τονίσει τα ειδοποιά χαρακτηριστικά των περιστατικών που ενδείκνυνται για τον εμπλουτισμό της διδασκαλίας και να ενθαρρύνει την συστηματική καταγραφή τους. Οι όροι του διαγωνισμού είναι οι ακόλουθοι:

1. Ο διαγωνισμός απευθύνεται σε έλληνες γεωμηχανικούς που δραστηριοποιούνται στην Ελλάδα ή στο εξωτερικό και είναι μέλη της ΕΕΕΕΓΜ.
2. Δικαίωμα συμμετοχής έχουν συγγραφικές ομάδες οι οποίες περιλαμβάνουν, είτε ως συ-συγγραφέα είτε ως σύμβουλο, έναν διδάσκοντα γεωμηχανικής, που θα είναι υπεύθυνος/η για τον καθορισμό:
  - α. Του μαθήματος / διδακτικής ενότητας, όπου ταιριάζει να ενταχθεί το περιστατικό και
  - β. Των μαθησιακών αποτελεσμάτων της χρήσης του περιστατικού στην διδασκαλία (βλέπε σημείο 7 και Πίνακα 1).
3. Η αίτηση συμμετοχής πρέπει να κατατεθεί, ηλεκτρονικά, έως την προθεσμία υποβολής περιλήψεων στο 7<sup>ο</sup> Πανελλήνιο Συνέδριο Γεωμηχανικής (15 Νοεμβρίου 2013).
4. Η αίτηση πρέπει να συνοδεύεται από περίληψη 800-1000 λέξεων, που θα περιγράφει:
  - α. Το συνολικό περιστατικό,
  - β. Το υποσύνολο, που θα αναπτυχθεί αναλυτικά για την διδασκαλία, και την αντίστοιχη περιοχή της γεωμηχανικής (π.χ. στερεοποίηση αργίλων, ευστάθεια πρανούς, βελτίωση εδάφους, κ.λπ.),
  - γ. Τα μαθησιακά αποτελέσματα που μπορούν να επιτευχθούν με την διδασκαλία του περιστατικού (βλέπε σημείο 7 και Πίνακα 1).
5. Οι αιτήσεις θα αξιολογηθούν από επιτροπή πέντε (5) γεωμηχανικών, εκ των οποίων οι τέσσερις (4) θα είναι διδάσκοντες γεωμηχανικής, οι οποίοι θα επιλέξουν τα τέσσερα (4) επικρατέστερα περιστατικά.

6. Η ΕΕΕΕΓΜ θα ειδοποιήσει τους συγγραφείς των τεσσάρων περιστατικών εντός μηνός από την προθεσμία υποβολής των αιτήσεων. Οι συγγραφείς θα πρέπει να υποβάλουν άρθρο, που θα περιγράφει τα βασικά σημεία του περιστατικού, από τεχνικής και διδακτικής άποψης, καθώς επίσης να έχουν διαθέσιμη, σε ηλεκτρονική μορφή, το συνοδευτικό διδακτικό υλικό (βλέπε σημείο 7 και Πίνακα 2), έως την προθεσμία υποβολής άρθρων στο 7<sup>ο</sup> Πανελλήνιο Συνέδριο Γεωμηχανικής (15 Μαρτίου 2014). Το άρθρο, μαζί με το συνοδευτικό διδακτικό υλικό, θα αξιολογηθεί ως ένα σύνολο από την επιτροπή, η οποία θα αποφασίσει ποιο περιστατικό θα βραβευθεί, καθώς και τη σειρά των επιλαχόντων, σύμφωνα με τα πιο κάτω κριτήρια:

- Αναδεικνύεται από το περιστατικό η εφαρμογή στην πράξη μιας θεωρίας / αρχής / τεχνικής που διδάσκεται σε μάθημα γεωτεχνικής μηχανικής;
- Αναδεικνύεται από το περιστατικό ένα πρόβλημα σημαντικό στην πράξη;
- Είναι το συνοδευτικό υλικό είναι επεξηγηματικό, πλήρες και πλούσιο;

Σημειώνεται ότι μεταξύ συγκρίσιμων αξιολογών περιστατικών θα δοθεί προτεραιότητα σε αυτά που αντιμετωπίζουν προβλήματα κατάλληλα για προπτυχιακή διδασκαλία.

7. Για να αξιολογηθεί ένα περιστατικό στο πλαίσιο του διαγωνισμού, είναι απαραίτητο να πληροί τις πιο κάτω προδιαγραφές:

- Το περιστατικό πρέπει να είναι κατάλληλο για μάθημα που διδάσκεται στα ελληνικά πολυτεχνεία και πολυτεχνικές σχολές, κατά προτίμηση προπτυχιακό, όχι εξειδικευμένο.
- Το περιστατικό πρέπει να έχει αναπτυχθεί κατάλληλα για την επίτευξη ενός ή περισσότερων μαθησιακών αποτελεσμάτων, οι οποίοι θα αναφέρονται σαφώς στην αίτηση και στο άρθρο. Παραδείγματα μαθησιακών αποτελεσμάτων δίνονται στον Πίνακα 1.
- Το συνοδευτικό υλικό πρέπει να είναι διαθέσιμο σε ηλεκτρονική μορφή και να είναι πλήρες. Ενδεικτικά περιεχόμενα δίνονται στον Πίνακα 2. Το άρθρο, κατ' ανάγκη, θα είναι περιορισμένης έκτασης και θα περιλαμβάνει τμήμα μόνον του συνοδευτικού υλικού. Σε περίπτωση βράβευσης, οι συγγραφείς δεσμεύονται να αναρτήσουν το πλήρες συνοδευτικό υλικό στο δίκτυο.
- Το περιστατικό πρέπει να συνοδεύεται από επιστολή του κυρίου του έργου ο οποίος συναινεί στη δημοσίευση στοιχείων από το έργο για εκπαιδευτικούς σκοπούς, με ή χωρίς ταυτοποίηση του έργου.

8. Το βραβείο είναι μονοετής δωρεάν συνδρομή στην ΕΕΕΕΓΜ για όλα τα μέλη της συγγραφικής ομάδας, η οποία θα προσκληθεί να διδάξει το περιστατικό υπό μορφή "Master Class" σε ειδική συνεδρία του πανελληνίου συνεδρίου και στα ελληνικά πολυτεχνεία και πολυτεχνικές σχολές.

9. Τα αποτελέσματα του διαγωνισμού θα ανακοινωθούν, μέσω ηλεκτρονικού ταχυδρομείου, σε όλα τα μέλη της ΕΕΕΕΓΜ και στα Πολυτεχνεία και Πολυτεχνικές σχολές, στην ιστοσελίδα της ΕΕΕΕΓΜ. Η επίσημη βράβευση θα γίνει στο 7<sup>ο</sup> Πανελλήνιο Συνέδριο Γεωμηχανικής.

### Βιβλιογραφικές Αναφορές

Pantazidou, M., Anagnostopoulos, G.A. & Tsatsanifos, C. (2008). Industry-academia collaboration produces geotechnical case studies for undergraduate instruction: An



example, a proposal, *Proc. 1<sup>st</sup> Int. Conf. on Education and Training in Geo-engineering Sciences*, Constantza, Romania, June 2–4.

Pantazidou, M. and Orr, T.L.L. (2012). Use of case studies in geotechnical courses: Learning outcomes and suitable cases, *Proc. Int. Conf. Shaking the Foundations of Geo-engineering Education*, Galway, Ireland, July 4–6.

Rogers, J.D. (2008). A historical perspective on geotechnical case histories courses, *Proc. 6<sup>th</sup> Int. Conf. on Case Histories in Geotechnical Engineering*, Arlington, VA, USA, Aug. 11–16.

**Πίνακας 1.** Ενδεικτικά μαθησιακά αποτελέσματα που μπορούν να επιτευχθούν με τη χρήση περιστατικών στη διδασκαλία του μαθήματος στο οποίο εντάσσεται το περιστατικό (επιλογή από Pantazidou and Orr, 2012).

A/A	Ορισμός μαθησιακού αποτελέσματος
	Στο τέλος του μαθήματος, οι φοιτητές είναι σε θέση να:
1	Αναγνωρίζουν πιθανές μορφές αστοχίας
2	Εφαρμόζουν τις αντίστοιχες αναλυτικές μεθόδους, οι οποίες έχουν ήδη αναπτυχθεί στο μάθημα ή σε προηγούμενα μαθήματα (προϋποθέτει 1)
3	Επιλέγουν τον τύπο των εδαφικών παραμέτρων για τις συγκεκριμένες αναλυτικές μεθόδους
4	Αναφέρουν παραδείγματα της μεταβλητότητας των αποτελεσμάτων των πειραματικών δοκιμών
5	Επιλέγουν κατάλληλα μοντέλα για την επίλυση γεωτεχνικών προβλημάτων
6	Καθορίζουν το εδαφικό προφίλ και τις τιμές των εδαφικών παραμέτρων που απαιτεί ο γεωτεχνικός σχεδιασμός (προϋποθέτει 3 και 4)

**Πίνακας 2.** Ενδεικτικά περιεχόμενα συνοδευτικού εκπαιδευτικού υλικού περιστατικών κατάλληλων για διδασκαλία (από Pantazidou et al., 2008).

<b>[1] Εισαγωγή στο περιστατικό</b>
Τύπος περιστατικού (πχ ενισχυμένο πρανές, βαθιά θεμελίωση)
Τοποθεσία περιστατικού (με πληροφορία αρκετή ώστε να εντοπιστεί το έργο σε χάρτη, αν ο κύριος του έργου συναινεί)
Φωτογραφίες από τον χώρο του έργου (ιδανικά πριν, κατά τη διάρκεια και μετά την κατασκευή)
<b>[2] Γεωλογική πληροφορία</b>
Χάρτης με τα σημεία των γεωτρήσεων
Γεωλογικό/Εδαφικό προφίλ
Στάθμη υπογείου ορίζοντα
<b>[3] Σχετικές αναλύσεις</b>
Χαρακτηριστικές διατομές
Τύπος γεωτεχνικών αναλύσεων (πχ στερεοποίηση, φέρουσα ικανότητα)
<b>[4] Γεωτεχνική έρευνα &amp; αξιολόγηση αποτελεσμάτων δοκιμών</b>
Γεωτεχνικές δοκιμές και αποτελέσματα
Εδαφικό προφίλ που χρησιμοποιήθηκε στην ανάλυση
Εδαφικές παράμετροι που χρησιμοποιήθηκαν στην ανάλυση
<b>[5] Κατασκευαστικά – σχεδιαστικά στοιχεία</b>
Περιορισμοί και δεδομένα γνωστά πριν την ανάλυση
<b>[6] Γεωτεχνικές αναλύσεις</b>
Τα κύρια στοιχεία/βήματα κάθε τύπου ανάλυσης
Παρουσίαση αποτελεσμάτων

## ΠΡΟΚΗΡΥΞΗ ΔΙΑΓΩΝΙΣΜΟΥ ΚΑΛΥΤΕΡΗΣ ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ ΕΦΑΡΜΟΣΜΕΝΟΥ ΕΝΔΙΑΦΕΡΟΝΤΟΣ ΓΙΑ ΤΟ ΕΤΟΣ 2013

- Ο διαγωνισμός απευθύνεται στους αποφοίτους των ελληνικών πολυτεχνείων και πολυτεχνικών σχολών οι οποίοι θα συγγράψουν στην ελληνική γλώσσα προπτυχιακή διπλωματική εργασία στην περιοχή της γεωτεχνικής μηχανικής.
- Δικαίωμα συμμετοχής έχουν οι αποφοιτήσαντες κατά το ημερολογιακό έτος του διαγωνισμού, μετά από πρόταση από τον επιβλέποντα της διπλωματικής εργασίας και εφ' όσον η διπλωματική εργασία πληροί τις προδιαγραφές που περιγράφονται πιο κάτω στο σημείο 7. Κάθε επιβλέπων μπορεί να προτείνει μία διπλωματική εργασία ανά έτος.
- Η αίτηση συμμετοχής στον διαγωνισμό κατατίθεται ηλεκτρονικά στην ΕΕΕΕΓΜ ([president@hssmge.gr](mailto:president@hssmge.gr) και [secretary@hssmge.gr](mailto:secretary@hssmge.gr)) εντός του μηνός Δεκεμβρίου του έτους του διαγωνισμού (δηλ. Δεκέμβριος 2013). Καθυστερημένες υποβολές δεν θα λαμβάνονται υπ' όψη.
- Η αίτηση θα πρέπει να συνοδεύεται από:
  - Περίληψη 800-1000 λέξεων που θα περιγράψει α) το πρόβλημα που αντιμετωπίστηκε στην διπλωματική στο πλαίσιο της υπάρχουσας βιβλιογραφίας/βέλτιστης πρακτικής, β) τη μέθοδο που επιλέχθηκε για να αντιμετωπισθεί το πρόβλημα, γ) τα αποτελέσματα/συμπεράσματα.
  - Επιστολή του επιβλέποντος που τεκμηριώνει την καινοτομία της διπλωματικής και τη χρησιμότητα των αποτελεσμάτων στην πράξη.
- Οι αιτήσεις θα αξιολογηθούν από επιτροπή τεσσάρων (4) γεωμηχανικών της πράξης και ενός (1) από το διδακτικό προσωπικό μη ελληνικού πανεπιστημίου, οι οποίοι θα επιλέξουν τις τέσσερις (4) επικρατέστερες.
- Η ΕΕΕΕΓΜ θα ειδοποιήσει τους συγγραφείς των τεσσάρων διπλωματικών εργασιών έως το τέλος Μαρτίου, οι οποίες θα πρέπει να αποσταλούν στην ΕΕΕΕΓΜ σε έντυπη μορφή σε 2 αντίτυπα έως το τέλος Απριλίου. Η επιτροπή θα αποφασίσει ποια διπλωματική είναι καλύτερη και τη σειρά των τριών επιλαχουσών σύμφωνα με τα πιο κάτω κριτήρια:
  - Είναι το πρόβλημα που αντιμετωπίστηκε σημαντικό στην πράξη;
  - Η μεθοδολογία που επιλέχθηκε για την επίλυση του προβλήματος μπορεί να εφαρμοσθεί στην πράξη;
  - Το περιεχόμενο της διπλωματικής εργασίας δείχνει την εις βάθος κατανόηση βασικών αρχών της γεωμηχανικής;
  - Η διπλωματική εργασία έχει γραφτεί με μια λογική δομή; Είναι «φιλική προς τον αναγνώστη» (στρωτή γλώσσα, σωστή ορθογραφία, επεξηγηματικές «λεζάντες» πινάκων και σχημάτων, εύκολη αναζήτηση και εύρεση των βασικών παραδοχών & συμπερασμάτων);
- Για να αξιολογηθεί μια διπλωματική εργασία στο πλαίσιο του διαγωνισμού, είναι απαραίτητα τα πιο κάτω περιεχόμενα:
  - Ελληνική περίληψη (1.5-2 σελίδες).
  - Αγγλική περίληψη (1.5-2 σελίδες) & αγγλικός τίτλος.
  - Κατάλογοι περιεχομένων, πινάκων και σχημάτων (με παραπομπή στις αντίστοιχες σελίδες).



- Ελληνοαγγλικό γλωσσάρι κύριων τεχνικών όρων που χρησιμοποιούνται στην εργασία.
- Κατάλογος συμβόλων.

Επί πλέον απαιτείται:

- Η έκταση της εργασίας να μην υπερβαίνει τις 200 σελίδες (εξαιρουμένων των παραρτημάτων τα οποία δεν αξιολογούνται).
- Όλα τα σχήματα και οι πίνακες πρέπει να είναι πρωτότυπα ή, σε αντίθετη περίπτωση, θα πρέπει να έχη ζητηθεί και δοθεί από τον εκδότη ειδική άδεια (που θα κατατεθεί μαζί με τη διπλωματική).

Αν κάποια από τις επικρατέστερες διπλωματικές δεν πληροί τις προδιαγραφές, αποκλείεται από τον διαγωνισμό χωρίς περαιτέρω αξιολόγηση.

8. Το βραβείο είναι απονομή «πλακέτας» και τιμητική εγγραφή και τετραετής δωρεάν συνδρομή στην ΕΕΕΕΓΜ.
9. Τα αποτελέσματα του διαγωνισμού θα ανακοινώνονται μέσω ηλεκτρονικού ταχυδρομείου σε όλα τα μέλη της ΕΕΕΕΓΜ έως τα μέσα Ιουλίου του επόμενου έτους του διαγωνισμού (δηλ. Ιούλιος 2014), ενώ η επίσημη βράβευση θα γίνεται στο πρώτο πανελλήνιο συνέδριο της ΕΕΕΕΓΜ που ακολουθεί το έτος του διαγωνισμού.

# ΠΕΡΙΛΗΨΕΙΣ ΠΡΟΣΦΑΤΩΣ ΥΠΟΣΤΗΡΙΧΘΕΙΣΩΝ ΔΙΔΑΚΤΟΡΙΚΩΝ ΔΙΑΤΡΙΒΩΝ

Institute of Infrastructure  
Division of Geotechnical and Tunnel Engineering  
Technikerstr. 13  
A-6020 Innsbruck, AUSTRIA  
Tel ++43/512/507-6673  
Fax ++43/512/507-2996  
E-Mail: [Anastasia.Blioumi@uibk.ac.at](mailto:Anastasia.Blioumi@uibk.ac.at)

## On Linear-Elastic, Cross-Anisotropic Rock

Αναστασία Μηλιούμη

Rocks composed of parallel layers are cross-anisotropic materials. The assessment of the material properties of cross-anisotropic rock requires laboratory tests with samples whose foliation has variable orientations relative to the loading axis. However, laboratory testing of rocks with pronounced foliation is associated with insuperable difficulties. The main reason is to be found in the inhomogeneity of natural rocks and difficulties to work with, e.g. disintegration during specimen extraction and preparation.

As an alternative, field tests can be performed. Cavity expansion field tests, like radial jack tests and borehole dilatometer tests, seem to be promising methods to determine the properties of linear-elastic, cross-anisotropic rock.

An analytical solution describing the displacements of the cavity wall with respect to the applied pressure and the orientation of the foliation of linear-elastic, cross-anisotropic rock is still missing. A new approximate solution to determine the material properties of such materials based on cavity expansion tests is described in this dissertation. Data obtained from radial jack tests served to the inverse analysis of the problem. With known internal radial pressure, radius of the cavity, orientation of foliation and displacements obtained from a field test, the approximation yields sets of material parameters which fit the measured displacements. The solution is restricted but not unique.

Three-dimensional finite element modelling is used to simulate cavity expansion in linear elastic, cross-anisotropic rock. A numerical investigation is performed to correctly establish the model and assess the influencing parameters for cavity expansion in such rock. Field measurements are then compared with the numerically calculated cavity wall displacements by implementing the material parameters as obtained from the described approximate solution. Similarities and discrepancies are described and explained.

An alternative way to study the behaviour of cross-anisotropic materials through laboratory small-scale cavity expansion tests in an artificial cross-anisotropic material is also considered. The setup and principles of this test are described and the feasibility of such tests is investigated.

Η διδακτορική διατριβή εξεπονήθη στο University of Innsbruck, Faculty of Civil Engineering, Department of Infrastructure, Division of Geotechnical and Tunnel Engineering, <http://www.uibk.ac.at/geotechnik/index.html.en>, υπό την επίβλεψη του καθηγητή Δημήτριου Κολύμπα (University of Innsbruck) και του καθηγητή Claudio Tamagnini (University degli Studi di Perugia). Το διδακτορικό χρηματοδοτήθηκε από το πανεπιστήμιο του Ίνσμπρουκ, το Austrian Science Fund (FWF) και το Ίδρυμα Προποντίς και ολοκληρώθηκε τον Οκτώβριο του 2011.

Dipl.-Ing. Dr. techn. Anastasia Blioumi  
University of Innsbruck



# ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ ΕΛΛΗΝΩΝ ΓΕΩΜΗΧΑΝΙΚΩΝ

## Σεμιναριακά Μαθήματα Παύλου Μαρίνου στην Νοτιοανατολική Ασία και Αυστραλία

Το προηγούμενο εξάμηνο ο Ομότιμος Καθηγητής Τεχνικής Γεωλογίας του Εθνικού Μετσοβίου Πολυτεχνείου Δρ. Παύλος Μαρίνος διδασκεύει σειρά σεμιναριακών μαθημάτων στα πλαίσια προγραμμάτων επιμόρφωσης μηχανικών στην ΝΑ Ασία. Κατά την διάρκεια των μαθημάτων αυτών προβλήθηκε έντονα η δουλειά που έχει γίνει στον τόπο μας με την κατασκευή των μεγάλων έργων σε ιδιαίτερες γεωτεχνικές συνθήκες. Στη συνέχεια ο Παύλος Μαρίνος παραθέτει μια σύντομη περιγραφή της περιοδείας του.

### APPLIED COURSE IN SE ASIA AND NORTHERN AUSTRALIA: ENGINEERING GEOLOGY AND ROCK ENGINEERING

A short account:

1. The countries: Australia, Malaysia, Myanmar, Singapore, Thailand, Vietnam.
2. The cities: Gold Coast (Brisbane), Kuala Lumpur, Yangon, Singapore, Bangkok, Hanoi, Ho Chi Minh City, Danang, Vinh Long (Mekong Delta).
3. The courses: 1 or 2 full days for each city (Bangkok half a day due to holiday).
4. The days: 12.5 full days with 7 to 8 hours lecturing each day in 25 diary days.
5. The hours: 88 hours
6. The bodies: Geotechnical, Tunnelling and Geoscience Societies, Institutions of Engineers, Universities.
7. The participants: Civil/Geotechnical Engineers (mainly), Geologists, Mining Engineers. Approximately 800 participants. High factor of efficient following and consideration
8. The affiliations: Consulting companies (mainly), graduate students, construction. Administration.
9. The subjects: Engineering Geology-behaviour of selected rock types, structural and stress conditions; rock mass characterization and design parameters; tunnelling in difficult ground; mechanized tunneling and geological constraints and geotechnical issues; geology in dam engineering; important case histories (mainly from personal experience). A special presentation on Karst Engineering was presented in Hanoi, while the lectures were more focused in urban tunnelling in Singapore.
10. The course material: All participants had in hands pdf copies of the ppt slides. Also a CD with supporting papers for further reading (for personal use). In Vietnam all slides were translated in Vietnamese.
11. Met knowledgeable colleagues and so many enthusiastic young people.
12. Very efficient aids in all lecture halls for both the lecturer and the audience.
13. The travel: 71 hours of flights, 15 hours by car
14. Variety of food; and what a food!
15. Little sleep!

16. Some free time for sightseeing however, thanks
17. The weather: the monsoon mild, the programme was not affected.
18. Great hospitality. Many thanks
19. I survived.



Photo: 1. Group photo In Yangon, Myanmar, Engineering Society, Geoscience Society



Photo: 2. Group photo in the Mekong University

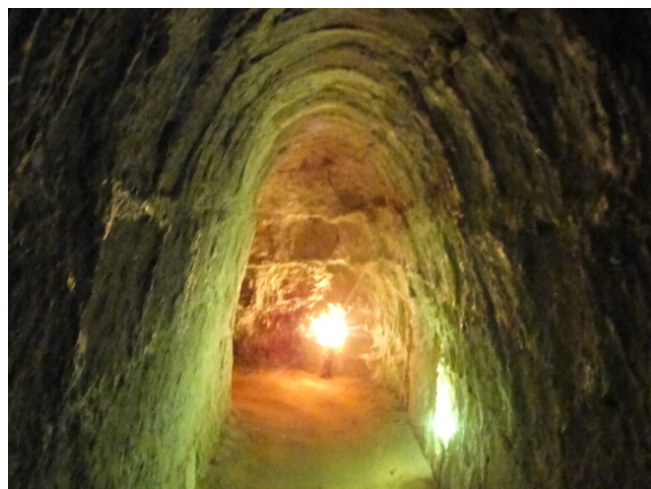


Photo: 3. A section of the net of tunnels constructed during the last war in this country, by the Vietcong south of the 17<sup>th</sup> parallel. Overconsolidated lateritic clayey soil with calcitic armature over the water table, depth from 3 to 10m in three levels. Width about 1.2m

# ΠΡΟΚΗΡΥΞΕΙΣ ΒΡΑΒΕΙΩΝ ΓΙΑ ΓΕΩΜΗΧΑΝΙΚΟΥΣ

## 2013 Shamsheer Prakash annual prize for excellence in teaching of Geotechnical Engineering



The Shamsheer Prakash Foundation solicits nomination (no application) for the "2013 SHAMSHER PRAKASH PRIZE FOR EXCELLENCE IN TEACHING OF GEOTECHNICAL ENGINEERING" for young teachers (less than 40 years old). Nominations are invited so as to reach the Honorary Secretary on or before October 31, 2013. The candidate's area of expertise should be Geotechnical Engineering and/or Geotechnical Earthquake Engineering. The candidate must have significant record of teaching excellence and show promise of continued excellence. The Prize consists of US \$1100.00 and a plaque. The nominations may be made on plain paper. The age may be relaxed in exceptional cases at the discretion of the judging committee.

All nominations will be reviewed by a Judging Committee of International Experts from Canada, India, Ireland, and the United States. The award will be announced by December 31, 2013. Suitable arrangements will be made for awarding the Prize at an appropriate ceremony in the country of residence of the winner.

### PARTICULARS FOR NOMINATION

Please send a complete nomination package in PDF format to the Foundation electronically and 1 CD-R by mail. The following information must be included in the order listed below:

NOTE: Since teaching excellence can be demonstrated many different ways, the nominator and referees are requested to clearly state the criteria they used to justify their nominee's teaching excellence.

However, the following criteria are initially suggested; 1) LEADERSHIP IN TEACHING, 2) SCHOLARSHIP OF TEACHING, 3) EFFECTIVENESS OF TEACHING, 4) RELEVANCE OF TEACHING TO GEOTECHNICAL ENGINEERING PRACTICE, AND 5) PEER REVIEWS OF TEACHING

1. Name of the Candidate with complete mailing address, phone number, fax number, E-mail address, date of birth, and age as of December 31, 2013
2. Nomination letter/s including a statement of 500 words outlining Significant Contributions towards Excellence in Teaching. (SEE NOTE ABOVE)
3. Two to Four more letters of recommendation (SEE NOTE ABOVE)
4. Chronology of education received

5. Chronology of jobs held
6. Area of specialization
7. List of refereed publications and grants related to teaching
8. One color digital photo (at least 300 dpi) with citation for listing
9. Any other relevant information.

Please make sure to put all the above information in a single PDF file only not to exceed 5MB size

For any other further information, please contact: [Professor Shamsheer Prakash](mailto:ProfessorShamsheerPrakash)

Shamsheer Prakash, Ph D, PE, Dist. M ASCE,  
Emeritus Professor of Civil Engineering  
Missouri Science, and Technology, and  
Distinguished Visiting Professor,  
Indian institute of Technology,  
Roorkee. UK India  
<http://7icchg.mst.edu>  
NEW EMAIL: [Prakash@mst.edu](mailto:Prakash@mst.edu)  
President – SP Foundation: Anand Kutir, 1707 Jackson  
Circle, Rolla, MO 65401 USA  
Tel: 573-364-5572  
[www.yoga10.org](http://www.yoga10.org)

# ΘΕΣΕΙΣ ΕΡΓΑΣΙΑΣ ΓΙΑ ΓΕΩΜΗΧΑΝΙΚΟΥΣ

ing letter stating clearly how your interests and experience relate to the project, and include a CV and the names and addresses of two academic referees. **Please quote ref no: ENG/726**

**This studentship will remain open until filled.**



## **Fully Funded PhD Research Studentship (3 years)**

### **Modelling Thermo-elasto-viscoplastic Behaviour of Structured Clays**

**University of Nottingham** - Division of Materials, Mechanics & Structures

#### **Faculty of Engineering**

Applications are invited for a fully funded PhD studentship to join the Nottingham Centre for Geomechanics (NCG) at the University of Nottingham, a global top 75 University. The student will work in a dynamic research environment and as part of a multi-disciplinary team of researchers and will undertake research related to advanced constitutive modelling and numerical simulation of geo-materials

The mechanical response of structured soft soils is greatly influenced from loading rates as well as temperature variations. Natural clays also exhibit inelastic, anisotropic, hardening/softening and time-dependant behaviour that further complicate matters. The focus of this project is to develop a simple and practical thermo-elasto-viscoplastic constitutive model that can capture well both time- and temperature-dependant characteristics of structured clays under both monotonic and cyclic loading conditions. The developed model will be validated against experimental data; it will provide a suitable solution to appropriately model soil behaviour in a variety of geotechnical engineering applications e.g. thermal-mechanical interactions in clay barriers around nuclear waste disposal facilities, clay response surrounding geothermal power plants etc. There will be opportunities to do additional experimental work, for model validation, at the state of the art NCG laboratory, and to present the research outputs locally and at international conferences.

Requirements of the studentship:

- i) Students should have a first-class or very good 2:1 honours degree in civil engineering, mechanical engineering, mathematics or a closely related discipline that includes courses in continuum mechanics and/or computational methods. An MSc degree with distinction, or equivalents, in geotechnics or mechanics is highly desirable.
- ii) Students should be able to demonstrate a strong interest in finite element programming and complementary knowledge of computing languages such as Fortran or C++; they should have good written and oral presentation skills as well as strong analytical and practical skills.

The studentship will cover PhD tuition fees for **UK/EU students**, due to funding restrictions and a tax free stipend for three years (**£13,590** for the 2013-14 academic year). The studentship is expected to start in October 2013, or as early as possible after this date.

We ask that you contact Dr Mohammad Rezaia directly, email: [mohammad.rezaia@nottingham.ac.uk](mailto:mohammad.rezaia@nottingham.ac.uk) with a cover-



# ΝΕΑ ΑΠΟ ΤΙΣ ΕΛΛΗΝΙΚΕΣ ΚΑΙ ΔΙΕΘΝΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΝΩΣΕΙΣ



## International Society for Soil Mechanics and Geotechnical Engineering

Ο απερχόμενος Πρόεδρος της ISSMGE Jean-Louis Briaud  
έστειλε το ακόλουθο ηλ.μη. στις εθνικές ενώσεις μέλη:

### Distinguished Colleagues, Dear Friends,

This is my forty sixth and last progress report after 1400 days as your President. Note that previous reports are on the ISSMGE web site at <http://www.issmge.org/en/the-society/the-president/progress-reports> if you need them. In this report, I will say good bye.

The main thing I wish to tell you is thank you, thank you, thank you from the bottom of my heart. Thank you for having me as your President and letting me serve you for the last 4 years. You have created 4 of the best and most rewarding professional years of my life. You elected me in Alexandria and I suddenly found myself on the same list as Terzaghi, Peck, Skempton and many other giants in our profession. It was very humbling and put a lot of pressure on my shoulders to do the best job I could do. Four years later I can assure you that I have given it everything I had. I have a lot of people to thank for this fantastic journey: the Board Members, the Secretariat, the Chairs of the Board Level Committees and of the Technical Committees, the Leaders of the Member Societies for their hospitality, and all of you for your kindness and hard work. I also wish to thank my wife Janet for giving me the freedom and the time to be President. She was a rock in a soil's world. She supported me and kept me honest all along including when I came home after my election in 2009 and I asked her how she felt to be married to the President of the International Society. She responded by saying "President Briaud, don't forget to take care of the garbage!"

I attach a write up of what has happened in the last 4 years in case you cannot come to Paris at the opening ceremony where I will present the State of the Society. I also thought that I would share with you my 10 rules of success developed with the help of others including Clyde Baker.

10. Chose the relentless pursuit of excellence as a way of life
9. Be curious. The discovery process is a fountain of youth
8. Work hard but balance your interests (fun, family, sport, art, world news)
7. Make lots of friends. Nurture your public relations

6. Look for solutions and not who is to blame. Leave that to the judge.
5. Be firm in your decisions but always fair and polite
4. Treat others as you wish to be treated, you will lead by example
3. Communication is the best way to solve problems. Convince through logic and data
2. Surround yourself with smart people and role models
1. Go after your dreams with vision and perseverance

I believe in team work and the ultimate team is the family. I think that we have developed a better sense of family in our society and we are stronger for it. I say good bye as your President, but it will be my pleasure to become again a regular member of ISSMGE and to continue to serve you to the best of my ability. You certainly can continue to count on me if I can help. While I will no longer be your president, I will have the same desire to help you and to help the professional family. You mean a lot to me. Thank you again for all your kindness, take care, and remember that happiness is a choice. See you soon in Paris.

Jean-Louis.

Jean-Louis Briaud  
President of ISSMGE  
International Society for Soil Mechanics and Geotechnical Engineering

Professor and Holder of the Buchanan Chair  
Zachry Dpt of Civil Engineering  
Texas A&M University  
College Station, TX 77843-3136, USA  
Tel: 979-8453795  
Cell: 979-7771692  
Fax: 979-8456554  
Email: [briaud@tamu.edu](mailto:briaud@tamu.edu)  
URL: <http://ceprofs.tamu.edu/briaud/>

## ISSMGE - The State of the Society - 2009 - 2013 SIMSG - Etat de la Société - 2009 - 2013

J.-L. Briaud

President of ISSMGE, Professor and Holder of the Buchanan Chair, Zachry Dpt. Of Civil Engineering, Texas A&M University, College Station, Texas, 77843-3136, USA. [briaud@tamu.edu](mailto:briaud@tamu.edu)

Distinguished Colleagues, Dear Friends,

The very first thing I wish to tell you is thank you, thank you for letting me serve you as your President for the last four years. You have given me four of the very best and most exciting years of my professional career. It has been an honor and a true pleasure for me to work with everyone of you for the betterment of our profession. Sometime people ask me how I feel about the Presidency, I answer it feels like a very hard working vacation!

You elected me in Alexandria, Egypt in 2009 and I suddenly found myself on a list next to the names of Terzaghi, Peck, Cassagrande, Skempton, Kerisel, and many other giants of our field (Fig. 1). This prestigious and enviable position also placed a tremendous sense of responsibility on my shoulders and generated a lot of pressure for me to do the very best job I could do. I can assure you that I gave it my very best effort, at the detriment of some of my other responsi-

bilities in life. My wife Janet kept me honest during all this time. I recall asking her how she felt to be married to the President of the International Society. She promptly answered President Briaud don't forget to take care of the garbage!!

1936 – 1957	K. Terzaghi	Austria, USA
1957 – 1961	A. W. Skempton	UK
1961 – 1965	A. Casagrande	USA, Austria
1965 – 1969	L. Bjerrum	Norway
1969 – 1973	R. B. Peck	USA
1973 – 1977	J. Kerisel	France
1977 – 1981	M. Fukuoka	Japan
1981 – 1985	V.F.B. de Mello	Brazil
1985 – 1989	B. B. Broms	Singapore
1989 – 1994	N.R.Morgenstern	Canada
1994 – 1997	M. Jamiolkowski	Italy
1997 – 2001	K. Ishihara	Japan
2001 – 2005	W. Van Impe	Belgium
2005 – 2009	P.S. Séco e Pinto	Portugal
2009 – 2013	J.-L. Briaud	USA



Fig. 1 Presidents of ISSMGE

## 1 VISION

My vision as President was

a. To involve the membership and generate a sense of ownership in every one of you. I wanted you to feel that you were part of your professional family and that the family cared about you. This would be done for example by creating Board Level Committees where more members could participate and make high level decisions, by writing progress report to ensure that you felt connected, and by creating new awards to recognize those who excel in our profession..

b. To modernize the society and further advance it into the electronic age. This would be done for example by starting a series of free webinars, revamping the web site, creating GeoWorld, transferring the Lexicon to an addressable data base available on the web site, having the Board start meeting by Skype conference calls to save money.

c. To help developing countries and the young geotechnical engineers. This would be done for example by raising money for the new ISSMGE Foundation which would receive applications and distribute grants, by creating a special group with direct access to the President.

d. To mobilize more actively the practitioners side of our society and help bridge the gap between academics and practitioners. This would be done by creating a special group for practitioners with direct access to the president and recruiting more Corporate Associates into the Society.

e. To enhance the image of the geotechnical engineer worldwide. This would be advanced by creating a Public Relations Group dedicated to simple steps that would increase the visibility of our profession.

My basic tactic to realize my vision was pretty simple:

1. Develop a vision of what I wanted to accomplish

2. Surround myself with very smart people. Here I was very lucky to be able to convince the outstanding people including Harry Poulos, Suzanne Lacasse, Mike Jamiolkowski, Marc Ballouz, Dimitris Zekkos, Francois Schlosser, Jennifer Nicks, Michael Lisysuk.

3. Share with them my vision and check if they truly embraced it.

4. Give them a lot of freedom and support.

5. Be a strong cheer leader for those who did well

6. Be a gentle but steady nudge for those who dragged the team down

7. Keep thinking and acting with a vision for the relentless pursuit of excellence in a just and friendly atmosphere.



Fig. 2 The 2009-2013 ISSMGE Board Members (in India)

## 2 THE BOARD (2009-2013)

I had a great team of 11 Board members who helped me accomplish all those initiatives. The Board members are shown in Fig. 2. Standing and from left to right are Samuel Ejezie (Vice President for Africa), Ikuo Towhata (Appointed board member), Ivan Vanicek (Vice President for Europe), Roger Frank (Appointed board member), Charles Ng (Appointed board member), Roberto Terzariol (Vice President for North America). Sitting and from left to right are Askar Zhussupbekov (Vice President for Asia), Michael Davies (Vice President for Australasia, first vice president and treasurer), Neil Taylor (Secretary General), Jean-Louis Briaud (President), Pedro Pinto (Past President), and Gabriel Auvinet (Vice President for North America).

## 3 BOARD LEVEL COMMITTEES

One of the first step was the creation of Board Level Committees (BLC) (Fig. 3) to engage more members in the affairs of ISSMGE. This process allowed me to have the participation of some 100 new people in charge of major decisions for The Society. The Technical Oversight Committee (TOC) chaired by Suzanne Lacasse in Norway was in charge of quality control for all 29 ISSMGE Technical Committees (TCs). The Membership, Practitioners, and Academicians Committee (MPAC) chaired by Harry Poulos in Australia was in charge of customer service for our 86 member societies including bringing academics and practitioners closer together. The Innovation and Development Committee (IDC) chaired by Dimitrios Zekkos in the USA was in charge of impacting The Society with new ideas and development of these ideas. In life, we rarely take the time to think so I decided that I would create a group whose job it would be to think. The Awards Committee (AWAC) chaired by Francois Schlosser in France would handle awards guidelines, awards decisions, and the creation of new awards if necessary. The Public Relations Committee (PRC) chaired by Marc



Ballouz of Lebanon would start work on making geotechnical engineering more visible. The Students and Young Members Presidential Group (SYMPG) chaired by Jennifer Nicks in the USA would work directly with the President to accomplish some of the goals that would better serve that part of our Society. The Corporate Associates Presidential Group (CAPG) chaired by Michael Lisyuk would play a similar role for practitioners.

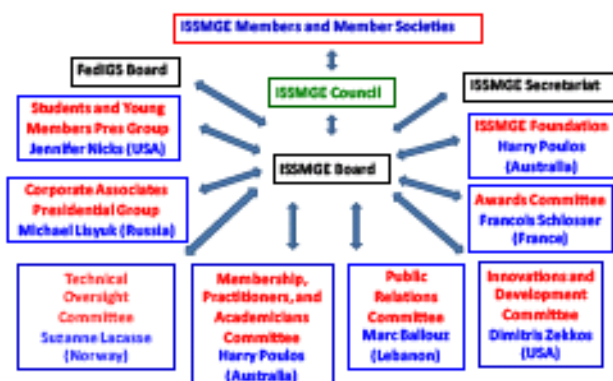


Fig. 3 ISSMGE Organization Chart.

Some of the accomplishments and changes created by these Board Level Committees with subsequent approval of the Board are listed below

1. Young members can participate in Technical Committees as corresponding members without limit. They have to be nominated by the member society
2. Technical committees are no longer disbanded when a new President is elected. They continue right through the president election. However TOC and the President retain the right of closing a TC if it does not perform or change the leadership if the chair does not perform well.
3. The tenure of the chairs of the TCs is four years renewable once. New chairs are suggested to TOC and the President by the members of the TC.
4. The TCs send a progress report to TOC every two years on which basis TOC decides to renew the TC or not but always after conferring with the President.
5. A short video was created by the public relations committee to explain in layman's terms what geotechnical engineers do.
6. A number of innovations were created by IDC and are detailed subsequently.

#### 4 MEMBER SOCIETIES

We have a total of 86 member societies (Fig. 4). On the map of Fig. 4, the member societies are in dark. As you can see from the map, we need to continue our work in Africa to bring in more countries from that region to join ISSMGE. During the last four years two societies lost their membership because of repeated lack of dues payment but three new societies joined ISSMGE: Belarus, Chinese Taipei, and Lebanon. The total number of individual members increased from 18561 in 2009 to 19755 in 2013 or a 6.4 % increase. The members are distributed as follows:

1. Africa: 875
2. Asia: 3673
3. Australasia: 1590
4. Europe: 7985
5. North America: 4285
6. South America: 1347

The largest member societies are the USA (3294) followed by Japan (1155) and the UK (1130). The smallest society has 13 members. All societies have one vote.



Fig. 4 ISSMGE Member Societies in 2013

#### 5 THE NAME OF OUR SOCIETY

We had a great discussion on the possible change of name of the society. The proposal was for ISSMGE to become ISGE: the International Society for Geotechnical Engineering. Arguments in favor and against were presented at the Council meeting in Toronto in 2011. The motion was proposed by several countries and the vote was 23 yes, 39 no, 1 abstain. We had a wonderful and professional discussion on this topic which brought out the passion all of us have for our profession. One of my goals during my presidency has been to engage the membership, I believe this topic definitely contributed to that. This was a very meaningful debate. It is my prediction that the name change to ISGE is only a matter of time but it may be a couple of decades before it occurs; soil mechanics is in our blood but it does not have to be in our name. I further predict that the word geotechnical engineering will soon become geo-engineering.

#### 6 TECHNICAL COMMITTEES

The Technical Committees (TCs) were reorganized in three categories (Table 1), fundamental topics (7 TCs), applications (16 TCs), and impact on society (6 TCs), for a total of 29 TCs. The location of the chairs and host society of the TCs is shown on Fig. 5.



Fig. 5 Location of the TC Chairs and sponsoring member societies

#### 7 HONOR LECTURES

The TCs were given the opportunity to create an honour lecture named after one of the giants in their field. There were already 2 such lectures in 2009 (The Ishihara Lecture and the Mitchell Lecture), 7 more were created between 2009 and 2013 as listed on Fig. 6. Many of them were presented in Paris at the conference. Note that honour lectures are not necessarily permanent. They are created for eight years renewable by decision of the technical committee and approval of the Board.

Table 1 ISSMGE Technical Committees

Category	TC#	TC Official Name	Host Country	TC Chair
Fundamentals	TC101	<u>Laboratory Stress Strength Testing of Geomaterials</u>	France	H. Di Benedetto
	TC102	<u>Ground Property Characterization from In-Situ Tests</u>	USA	P. Mayne
	TC103	<u>Numerical Methods in Geomechanics</u>	Hong Kong	K. T. Chau
	TC104	<u>Physical Modelling in Geotechnics</u>	Switzerland/Australia	S. Springman ('til 1 July 2010) C. Gaudin
	TC105	<u>Geo-Mechanics from Micro to Macro</u>	UK/Japan	M. Bolton/ M. Hyodo
	TC106	<u>Unsaturated Soils</u>	Spain	E. Alonso
	TC107	<u>Laterites and Lateritic Soils</u>	Ghana	K. Ampadu
Applications	TC201	<u>Geotechnical Aspects of Dykes and Levees, Shore Protection and Land Reclamation</u>	Netherlands	M. A. Van
	TC202	<u>Transportation Geotechnics</u>	Portugal	A. Gomes Correia
	TC203	<u>Earthquake Geotechnical Engineering and Associated Problems</u>	Greece	K. Pitilakis
	TC204	<u>Underground Construction in Soft Ground</u>	France/Netherlands	R. Kastner/ A. Bezuijzen
	TC205	<u>Safety and serviceability in geotechnical design</u>	UK	B. Simpson
	TC206	<u>Interactive Geotechnical Design</u>	Canada	K. Been
	TC207	<u>Soil-Structure Interaction and Retaining Walls</u>	Russia	V. Ulitsky
	TC208	<u>Slope Stability in Engineering Practice</u>	Canada	J. Fannin
	TC209	<u>Offshore Geotechnics</u>	USA	P. Jeanjean
	TC210	<u>Dams and Embankments</u>	China	X. Zu
	TC211	<u>Ground Improvement</u>	France	S. Varaksin
	TC212	<u>Deep Foundations</u>	Germany	R. Katzenbach
	TC213	<u>Scour and Erosion</u>	Germany	M. Heibbaum
	TC214	<u>Foundation Engineering for Difficult Soft Soil Conditions</u>	Mexico	J. L. Rangel
	TC215	<u>Environmental Geotechnics</u>	Italy	M. Manassero
	TC216	<u>Frost Geotechnics</u>	Norway	A. Instanaes
Impact on Society	TC301	<u>Preservation of Historic Sites</u>	Italy	C. Viggiani
	TC302	<u>Forensic Geotechnical Engineering</u>	India	V. V. S. Rao
	TC303	<u>Coastal and River Disaster Mitigation and Rehabilitation</u>	Japan	S. Iai
	TC304	<u>Engineering Practice of Risk Assessment and Management</u>	Singapore	K. K. Phoon
	TC305	<u>Geotechnical Infrastructure for Megacities and New Capitals</u>	Brazil	A. Negro
	TC306	<u>Geo-Engineering Education</u>	Australia	M. Jaksa
	TC307	<u>Sustainability in Geotechnical Engineering</u>	Canada	D. Basu

## 8 WEBINARS

Webinars are lectures presented over the internet as follows. The speaker is at her or his desk in front of the computer screen. The speaker talks and advances the power point slides as would be done in a conference setting. The participants sit in front of their computer many kilometers

**ISHIHARA – Earthquake**  
**MITCHELL – Site Characterization**  
**BISHOP – Laboratory Testing**  
**KERISEL – Monument Preservation**  
**SCHOFIELD – Physical Modeling**  
**McCLELLAND – Offshore Geotechnics**  
**FUJITA – Underground Construction**  
**MENARD – Soil Improvement**  
**ROWE – Environmental Geotechnics**

Fig. 6 ISSMGE Honour Lectures

away and listen to the voice of the speaker through voice over IP and watch the slides on their computer screen. Fig. 7 shows the list of webinars offered over the last two years and the location of the computers connected worldwide for the first webinar. A contract was established with a web service company to facilitate the connection with many participants. The webinar series started in 2011 and the President gave the first webinar. Until August 2013 the webinars have been free and the recordings have been kept on the ISSMGE web site for free access. These recorded webinars have been accessed 1664 times since they have been uploaded three months ago. All speakers have been generous and offered to present the webinars for free as a gift to their fellow geotechnical engineers.

1. Scour and Erosion – Briaud, USA, 23rd Aug 2011
2. Intelligent Compaction – Correia & Chang, Portugal, 25th Oct 2011
3. Eurocode- Bond, UK, 19th Dec 2011
4. Risk and Geotech Engrg – Medina & Uzielli, USA, 24th Feb 2012
5. Landfill liners – Rowe, Canada, April 2012
6. Unsaturated soils – Alonso, Spain, July 2012
7. Pile driving – Rausche, USA, September 2012
8. Earthquake engineering – Towhata, Japan, November 2012
9. Geosynthetics – Koerner, USA, January 2013
10. Ground Improvement – Varaksin/Huybrechts, Belgium, March 2013
11. Geophysics – Foti, Italy, May 2013
12. Foundations of very tall structures – Poulos, July 2013



Fig. 7 Webinar series and location of computers connected to the first ISSMGE webinar.

## 9 AWARDS

In 2009, we had the Terzaghi Oration which is selected by the President of the Society alone, the Kevin Nash Gold Medal decided by the Council of Past Presidents, and three young geotechnical engineer awards decided by a committee of the Board. After calculating the ratio of awards offered by ISSMGE over the number of individual members of

ISSMGE, I discovered that this ratio was extremely small compared to most other professional societies. We created 7 new awards as shown in Fig. 8. Then we created the Awards committee (AWAC) to finalize the awards descriptions, handle the collection of nominations and the selection process. The Board would make the final choice among the two candidates recommended by the Awards committee. The awards will be given at the Awards lunch in Paris and will be recorded on the ISSMGE web site.

**Terzaghi Oration**  
**Kevin Nash Gold Medal**  
**3 Young Geotechnical Engineer Awards**  
**Outstanding Technical Committee**  
**Outstanding Member Society**  
**Outstanding Geotechnical Project**  
**Outstanding Innovator**  
**Outstanding Young Geotechnical Engineer**  
**Outstanding Public Relations**  
**Best paper in the Int. J. Geoen. Case Hist.**  
**9 Named Lectures**

Fig. 8 ISSMGE Awards

## 10 TRAVEL

I travelled extensively over the last 4 years with a total of 80 trips as shown in Fig. 9. During those trips I met so many people and made so many new friends. It was always a pleasure to meet geotechnical engineers throughout the world and I learned so much. I realized how much of a difference there is in the standard of living across the globe and that these differences cannot be solved by engineering and medicine alone. The biggest impediment to progress in some countries is corruption. Other impediments to an increase in the standard of living are lack of education and transportation. Until such basic problems are solved, the third world cannot rapidly improve. I kept many photographs of my trips and will continue to appreciate them as very special moments (Fig. 10).



Fig. 9 The 80 places I visited during my Presidency.

## 11 THE ISSMGE FOUNDATION

One of the realizations during my early travel was that there are huge inequalities in the salaries of geotechnical engineers throughout the world. Some people told me that their salary was \$1000/year and added "How can I go to the conferences that you organize when the registration alone approaches one year salary". This is when I decided to create the ISSMGE Foundation. By the way, it seemed very appropriate for a geotechnical engineering organization to have a Foundation! Harry Poulos agreed to look after its functioning and to head the grant distribution process. Today, any member of ISSMGE can apply for a grant from the Foundation. The application form and the rules are on our web site at <http://www.issmge.org/en/issmge-foundation>.

Many geotechnical engineers, geotechnical companies, member societies, and even Technical Committees have contributed to the Foundation (Fig. 11) which currently has

about \$140,000 and has awarded grants to 19 people worldwide. Remember this saying that when you die, the only part of you that does not die with you is what you have given to others.

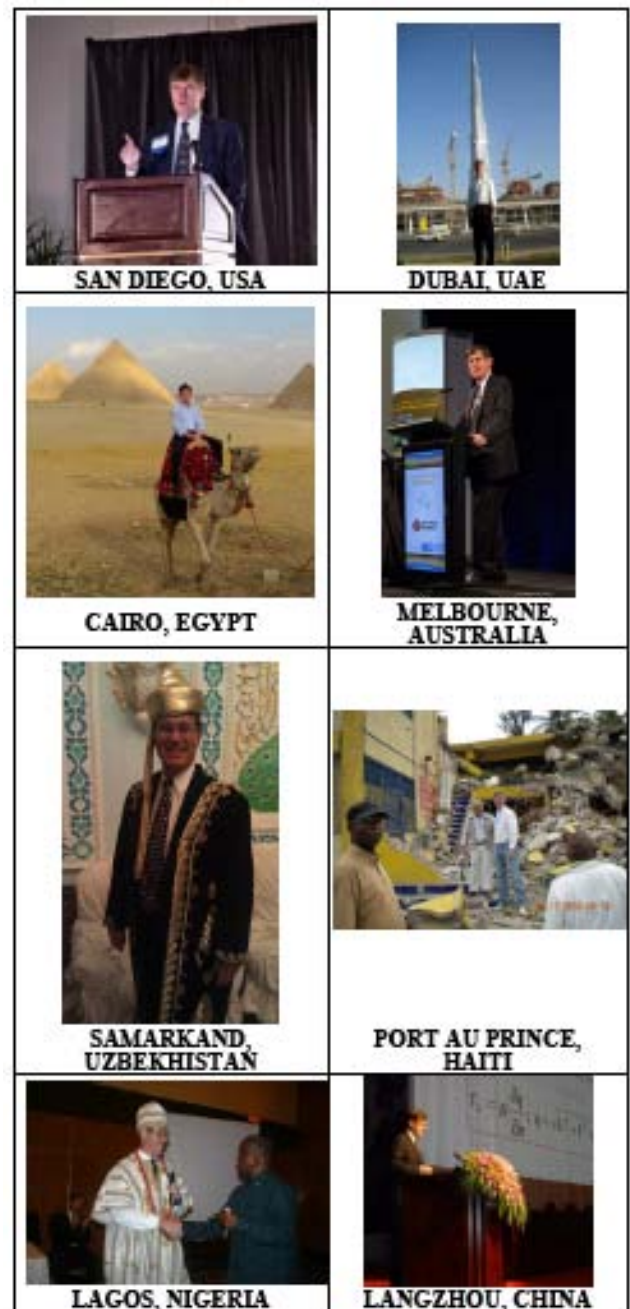


Fig. 10 President Briaud on the road

## 12 CORPORATE ASSOCIATES

ISSMGE Corporate Associates (Fig. 12) are geotechnical engineering companies, including consultants, contractors, and manufacturers who pay dues (\$1500/year) to ISSMGE for a list of benefits (<http://www.issmge.org/en/corporate-associates>) and to support the profession. The Corporate Associates representatives (one per company) also form the Corporate Associate Presidential Group under the leadership of Michael Lisyuk of Russia. This group was created to work on aspects of ISSMGE which could benefit practitioners more specifically. In 2009 we had 21 CAs, today (2013) we have 43 CAs. This remarkable increase in the number of CAs is due to the hard work of many people and is very welcome. However this number still pales compared to the number of CAs in other international societies closely associated with ISSMGE who have more than 100 CAs. If



#### DIAMOND (\$50,000 and above)

International Society for Soil Mechanics and Geotechnical Engineering

Professor & Mrs Jean-Louis Briaud

#### PLATINUM (\$25,000 to \$49,999)

#### GOLD (\$10,000 to \$24,999)

Chinese Institution of Soil Mechanics and Geotechnical Engineering

International IGM s.a.r.l - Institute for Geotechnics and Materials

Geo-Institute of ASCE

Japanese Geotechnical Society

#### SILVER (\$1,000 to \$9,999)

Professor John H. Schmertmann

Deep Foundations Institute

Yonsei University

Korean Geotechnical Society

Californian Geotechnical

Engineers Assn.

Professor Ikuo Towhata

Chinese Taipei Geotechnical Society

Professor Zuyu Chen

East China Architectural Design

and Research Institute

ISSMGE TC Ground Improvement

Professor Askar Zhussupbekov

ISSMGE TC Forensic

Geotechnical Engineering

Yoshi IWASAKI

#### BRONZE (\$0 to \$999)

Professor Mehmet T. Tümay

Nagadi Consultants (P) Ltd

Professor Anand J. Puppala - University of Texas Arlington

Fig. 11 ISSMGE 22 Foundation donors

you see your company logo on Fig. 12 we really appreciate your support. If you don't, please consider joining and supporting your profession.



Fig. 12 ISSMGE 42 Corporate Associates

#### 13 THE INTERNATIONAL JOURNAL OF GEOENGINEERING CASE HISTORIES

Practitioners often complain that geotechnical journals are too academically oriented and that there is little useful to them. The IJGCS fills that gap:

(<http://www.issmge.org/en/resources/international-journal-of-geoengineering-case-histories>). Born a few years ago in the mind of Dimitris Zekkos, the IJGCS was endorsed by ISSMGE in early 2009 and has seen slow but steady growth. It is free of charge, on line, in color, with embedded spread sheet data when clicking on the figures. It is particularly welcome by developing countries which have access to high quality papers for free. It is not only useful to practitioners but also to professors who can use the case histories for their students in class. Jonathan Bray

was the first editor in chief followed recently by Pedro Pinto. The ISSMGE TCs now have the opportunity of setting up special issues and the ISI rating is around the corner. The future of the IJGCS is very bright. I urge all of you to consider publishing a high quality case history in IJGCS. In life you have your financial wealth potential and your intellectual wealth potential. Publishing a case history in IJGCS is making an intellectual gift to developing countries: be generous and take the time to publish in IJGCS.



Fig. 13 GeoMap within GeoWorld: the new geotechnical engineers interaction medium

#### 14 GEOWORLD

Again born in the mind of Dimitris Zekkos and endorsed by IDC and SYMPG, GeoWorld (<http://www.mygeoworld.info/>) is to geotechnical engineers what Facebook is to social networking. It allows geotechnical engineers in the world to interact and make friends on line, to exchange questions and answers on various topics, to post examples, and to become even more connected internationally. Geoworld was launched in October 2011 and has now reached 2600 individual members, 160 companies, and 76 professional organizations. GeoMap is a new application within GeoWorld which allows you to find out members and companies in any geographic area by clicking on the GeoMap (Fig. 13). You can also find the location of upcoming conferences worldwide and the location of the case histories published in the IJGCS.

#### 15 THE NEW ISSMGE WEB SITE

Our new web site was launched in 2012. It was changed to allow ISSMGE to incorporate the latest technology and to modernize the look of the pages while maintaining flexibility of access and modification by the Secretary General's office. The new site has a new conferences database, has increased functionality, hosts the recorded webinars, and promotes the integration with GeoWorld. The number of visitors has nearly double in the short time since it has been open going from 2200 visitors in June 2012 to 4000 in March 2013 (Fig. 14). It also now hosts the new electronic version of the Lexicon.

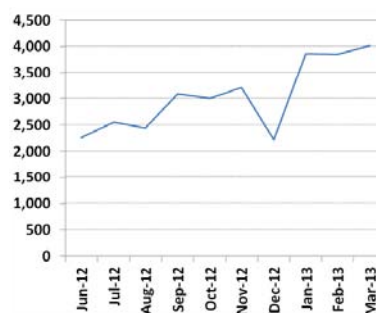


Fig. 14 Traffic on the new ISSMGE web site over the last 10 months.

The Lexicon was started around 1953 with the translation of geotechnical engineering terms in three languages: English, French, and German. This was very quickly recognized as a very valuable resource and had reached 8 languages by 1981 (5th edition). It had stayed that way until about 3 years ago when I asked Dimitris Zekkos and the Innovation and Development Committee (IDC) to transform the paper copy into an electronic and addressable Excel spread sheet and if at all possible increase the number of languages. We now have an e-Lexicon on our web site with 12 languages. Note that the e-Lexicon was a huge amount of work and is a great example of team work across country borders by many member societies and enabled by a platform developed by Geoengineer.org. The e-Lexicon includes a web-based application that allows users to query the database and find the translation of a total of 1590 geotechnical terms in 12 languages, specifically: English, French, Spanish, Turkish, Chinese (traditional and simple), German, Japanese, Portuguese, Russian, Persian (Farsi), and Finnish.

#### 17 THE ISSMGE BULLETIN

The ISSMGE Bulletin was remarkably well handled by Ikuo Towhata as Editor in Chief and his team of editors. The Bulletin grew significantly in size and content under his leadership. Furthermore it went from 4 issues per year to 6 issues per year. We are very grateful to him for this enormous responsibility.

#### 18 THE SECRETARIAT IN LONDON

Neil Taylor was our Secretary General for the period and faced his responsibility with great poise. I could always count on Neil to tell me what the bylaws said. Paloma Peers was his assistant and continued to be a rock in a soil's world. I also want to thank my assistant Theresa Taeger for being so reliable and dedicated to perfection.

#### 19 THE FINANCES

The finances of ISSMGE are in very good shape. The Members Societies dues have not changed during the last 4 years yet we have started new free programs for our members such as the webinars. Our budgets over the last 4 years have been approximately balanced and our reserves are healthy. This gives me a good occasion to thank the United States National Society and the Geo-Institute of ASCE for contributing to my yearly budget.

#### 20 THE PARIS CONFERENCE

The 18th International Conference on Soil Mechanics and Geotechnical Engineering will take place in Paris from 2 to 5 September 2013 and judging by the outstanding preparation, it will be a magnificent success. Our professional family will get together, to learn from the best, to exchange ideas and practices, all this in a classy, distinguished, yet relaxed and fun atmosphere. We are very grateful to our host: the French member society and its sponsors. Most of the members of the organizing committee are shown in Fig. 15 including Philippe Mestat, Chair of the Committee (center front row).

#### 21 THE PROGRESS REPORTS

Communication helps to solve problems and to generate a sense of belonging. This is why I started the monthly progress report in November 2009. The other reason was to tell you what was being accomplished. Since I got elected on 9Oct2009, my monthly report came on the 9th of each month. It required a tremendous discipline and dedication to not miss any of them but it provided a regular self evaluation of my work and our progress.



Fig. 15 The 2013 ICSMGE Paris conference organizing committee and its chair Philippe Mestat (center front row).

#### 22 NEW COPYRIGHT POLICY

A Task force led by Rainer Massarsch (Sweden) worked on a new ISSMGE policy for authors copyrights. In a nutshell, the recommendation is that authors should give publishers the right to publish but should retain the copyright of their work. The policy documents including a recommended agreement form are posted on the ISSMGE web site under Resources. While the Task Force did not address this point it is interesting to note that for books publisher pay a royalty to the author but this is not the case for journal articles yet the process is quite similar. For journal articles, the author prepares the manuscript for free, the reviewers review the manuscript for free, they both give their work to the publisher for free, and then the publisher turns around and sells that work for a profit. Something does not seem right with this process. I would suggest that authors should receive fair market value for their work but may exercise the option of gifting it to the profession.

#### 23 FUTURE OF GEOTECHNICAL ENGINEERING

It is always very difficult to predict the future. A 20 year forecast is easier than a 100 year forecast and a 1000 year forecast is nearly impossible. Yet if we go back in history about 1000 years ago to the time of the Tower of Pisa, we then realize that designing a foundation for that Tower today would be a very simple exercise. Then we wonder by extrapolation what geotechnical engineering will be like in another 1000 years. Will we have?

1. Complete non intrusive site investigation of the entire soil volume,
2. Automated 4D computer generated design by voice recognition and based on a target risk,
3. Tiny and easily installed instruments to monitor geotechnical structures,
4. Unmanned robotic machines working at great depth,
5. Significant development of the underground,
6. Extension of projects into the sea,
7. Soil structure interaction extended to thermal and magnetic engineering
8. Failures down to a minimum,
9. Expert systems to optimize repairs of defective geotechnical engineering projects,



10. Geospace engineering of other planets,
11. Geotechnical engineers with advanced engineering judgment taught in universities,
12. No more lawyers because of the drastic increase in projects reliability (Fig. 16).

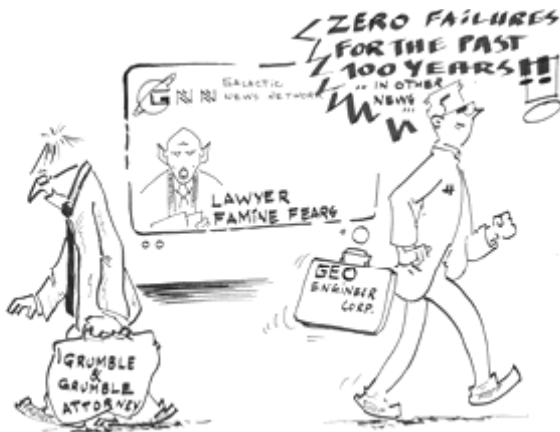


Fig. 16 Improved reliability of geotechnical projects (courtesy of George Nasr, Lebanon)

## 24 A SUCCESSFUL CAREER

A successful career is built on a series of demonstrated successes by an individual alone or as part of a team. In the performance of your job, remember when you make a decision of any sort that one mistake will take ten successes to erase the mistake from the mind of your peers. This is why it is always important to concentrate and plan. Also remember before a challenging moment that you may have been through similar tough moment before and have done well; this reasoning will give you added confidence and lower the stress. The following are some thoughts on what is important in a career. They have been inspired from discussion with many engineers over time including Clyde Baker and personal experiences as well.

10. Chose the relentless pursuit of excellence as a way of life
9. Be curious. The discovery process is a fountain of youth
8. Work hard but balance your interests (fun, family, sport, art, world news)
7. Make lots of friends. Nurture your public relations
6. Look for solutions and not who is to blame. Leave that to the judge.
5. Be firm in your decisions but always fair and polite
4. Treat others as you wish to be treated, you will lead by example
3. Communication is the best way to solve problems. Convince through logic and data
2. Surround yourself with smart people and role models
1. Go after your dreams with vision and perseverance

## 25 GEOTECHNICAL ENGINEERING FOR THE PEOPLE, BY THE PEOPLE, WITH THE PEOPLE

While we continue to advance the profession, there is also no doubt that we do not get the recognition that we deserve. If you go in the street today and say to a passerby "my child is a heart surgeon", that person will be very impressed. If you then say my other child is a geotechnical

engineer, you will likely be asked: "what is that?". There is a need to enhance the public's recognition and awareness of our profession and this is why we have created the Public Relations Committee led by Marc Ballouz. It will be a very long road before we are recognized as heart surgeons are but the only way we can make a real difference is if every one of you takes the time to explain it to the people in the streets. One of our best ambassadors is Ikuo Towhata from Japan who came up with this saying: "Geotechnical engineering for the people, by the people, and with the people".

## 26 CONCLUSION

If someone asked me what has been the most rewarding part of my presidency I would not hesitate and say that it is making so many new friends all over the world (Fig. 17). Bill Gates, the richest man in the world today, was asked "how do you measure success in life?". I believe he responded something like: "by how many friends you have". All of you have been very kind to me over the last 4 years. I do not know if I will ever be able to repay such kindness before I die but I can assure you that it did not go unnoticed and it was extremely appreciated. Everywhere I went it felt like coming home for a special event, you welcomed me in your daily life as if I were coming to see the family. You treated me like a close friend and made me feel comfortable.

I believe in team work and the ultimate team is the family (Fig. 18). I think that we have developed a better sense of family in our society and we are stronger for it. I say good bye as your President, but it will be my pleasure to become again a regular member of ISSMGE and to continue to serve you to the best of my ability. You certainly can continue to count on me if I can help. While I will no longer be your president, I will have the same desire to help you and to help the professional family.





Fig. 17 So many new friends!

You mean a lot to me. Thank you again for all your kindness, take care, and remember that happiness is a choice.

ISSMGE is our professional family.  
Helping ISSMGE is at the level of a family obligation



Don't ask what ISSMGE can do for you,  
ask what you can do for ISSMGE

Fig. 18 The Professional family

To finish I will borrow a saying from ASFE. When it comes to the soil, when it comes to the Earth, you are the best. Indeed, you are the best people on Earth.

*Jean Louis Briaud*

30 April 2013

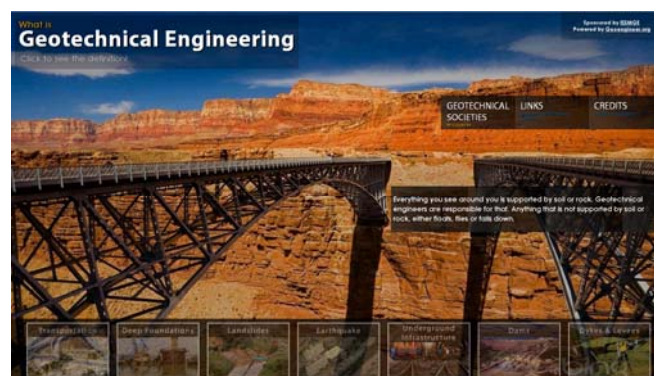
## Public Relations and Geotechnical Engineering

Ο Πρόεδρος της ISSMGE Jean-Louis Briaud έστειλε το ακόλουθο ηλ.μη. στις εθνικές ενώσεις μέλη:

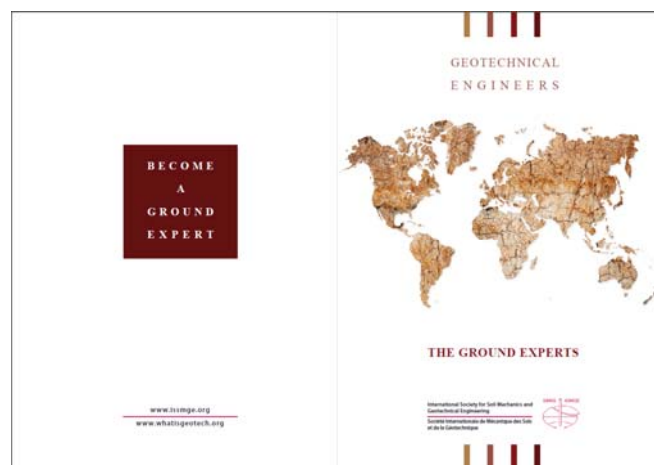
Distinguished Colleagues, Dear Friends,

I want to share with you the latest contribution of the Public Relations Committee (PRC) which we created in 2011 to continue to enhance the image of Geotechnical Engineering. Dr. Marc Ballouz, chair of PRC, and his committee members have done a remarkable job of preparing a number of media instruments listed below including a YouTube video, an informational web site, a brochure, and the time capsule. Please, take a minute to look at them, find Marc at the upcoming Paris conference (ISSMGE Booth 97), discuss improvements with him, and get involved in enhancing the image of our profession. It is a long road but if we do not start now we will never get there.

- The ISSMGE/PRC Movie: "What is Geotechnical Engineering", accessible through Youtube at <http://www.youtube.com/watch?v=uEIPkqhgoJw>. It will be shown in Paris at the ISSMGE Booth 97
- The ISSMGE/PRC Website: "What is Geotechnical Engineering" at [www.whatisgeotech.org](http://www.whatisgeotech.org)

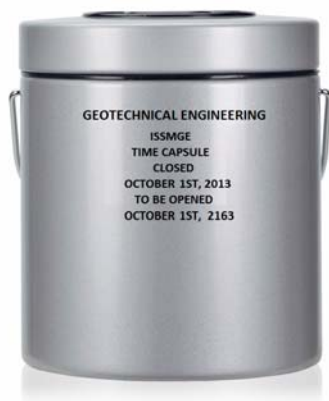


- The ISSMGE/PRC flyer – 1000 hard copies are already printed for the Paris Conference (ISSMGE Booth 97)





- The ISSMGE/PRC Roll-Up Banner – 2 Roll-up Banners will be available in Paris (ISSMGE Booth 97)
- The ISSMGE/PRC Time Capsule: A time capsule in the form of a metallic Barrel, titled “Geotechnical Engineering” will be launched at the Paris Conference (ISSMGE Booth 97). The capsule will be marked by a plate as shown in the attached picture. It will include objects and material collected from country members that best represent geotechnical engineering today. The time capsule will be registered by the ISSMGE secretariat at the following address: [http://www.oglethorpe.edu/about\\_us/crypt\\_of\\_civilization/time\\_capsule\\_questionnaire.asp](http://www.oglethorpe.edu/about_us/crypt_of_civilization/time_capsule_questionnaire.asp)



Thank you very much Dr. Ballouz and PRC members for your hard work. We all appreciate your remarkable contribution. See you in Paris.

Jean-Louis Briaud

President of ISSMGE



### **Playing with Reinforced Soil Workshop IGS-Netherlands 19 March 2013**

On 19 March 2013 the Dutch chapter of the IGS (NGO) organized a workshop on the topic geosynthetic reinforced retaining walls. The theme of this workshop was “Playing with Reinforced Soil”. As the theme suggests this was a workshop with plenty of room for creativeness and out of the box thinking.

#### **Creative with sand**

Seven teams were challenged to construct a small scale reinforced wall. Each team consisted of at least a client, a designer, a contractor and a supplier. However, one team accidentally consisted of three geotechnical advisors only.

Each team received two bags of sand, each of a different quality, some toilet paper kitchen paper and a pile of A3 paper sheets. Each team had to construct a 0.3 m high wall in a wooden mould. Three types of moulds were available,

with an inclination (batter) varying from 0 to 10 degrees from the vertical. After construction, the front panel of the mould was removed and the scale model was tested for stability by three volunteers.

The teams were really creative. The construction materials we supplied were identical for each team, but the work resulted in seven unique constructions. Every single detail was different: the construction time, the height of the sand layers between the reinforcement layers, the length of the reinforcement and back folding (wrapping around) of the reinforcement at the front or not. One team even constructed an overhanging construction by turning their mould upside down after filling! Others had been inspired by the Japanese construction method, and crammed the bags of sand into the mould. Another model was constructed as lasagne: thin layers of sand and reinforcement without back folding. In the resulting model, the reinforcement was invisible: vandal proof and relatively cheap.



Photo 1 Test loading of the winning scale model

The winning team with the three geotechnical advisors first strolled around the work shop area to look for better construction material. They found some chicken wire-netting and some straw. The team constructed a well thought through design, with chicken wire-netting, paper, and the better quality construction sand at the front. They added the straw to give the model a green appearance. Photo 1 shows how this model was tested playfully. This team, consisting of Marijn Brugman of Arthe Civil & Structure, Rens Servais of Strukton and Dirk Goeman of Crux Engineering, was awarded with the IGS-Dutch-Chapter-Challenge-Cup!

#### **Creative with reinforcement**

The day had started with two introductions. Wim Voskamp had told about the history and recent applications of soil reinforcement. Theo Huybregts had explained design principles of reinforced retaining walls and slopes. Then, Piet van Duijnen challenged the participants to answer three questions:

- How can we improve existing constructions?
- Which new applications of reinforced soil are possible?
- Which problem needs a solution with reinforced soil?

Most ideas that were generated in groups had been discussed earlier in tender practice. Some of them had been rejected because the technique had not been proved yet. Others have been realized. Others seem promising but need more development. We summarize some of the ideas.

#### **Anchoring**

The reinforcement in a retaining wall can easily be pre-stressed by installing the reinforcement across a pit, and then forcing it into the pit, see Figure 1. Practical applications did not yet lead to a spectacular improvement, although finite element calculations show a large improvement.

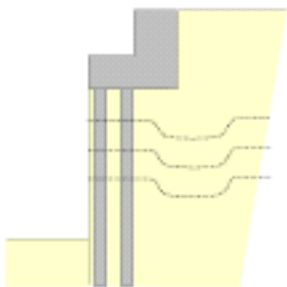


Figure 1 Improving the anchorage of the reinforcement with a pit

### Tunnels

Several solutions for tunnels were presented. Figure 2 shows a geotubes-ecoduct. Figure 3 shows a combination of EPS and geosynthetic reinforcement. The EPS has a stable shape, and can bear tensile as well as compaction forces. Finally, an idea was presented to apply cell reinforcement in a variation on the wall-roof method, see Figure 4. One of the challenges of the last two solutions is the fire resistance.

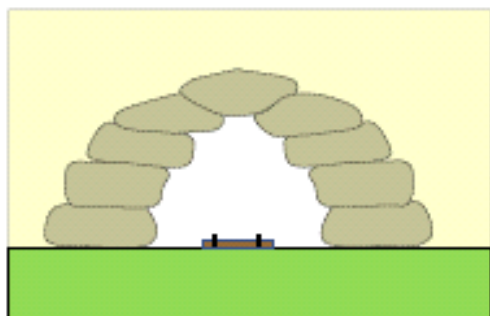


Figure 2 Ecoduct of geotubes



Figure 3 EPS and geosynthetic reinforcement in a viaduct

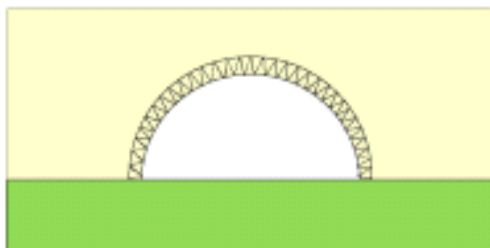


Figure 4 Variation on the walls-roof method

### Shape stability of the facing of a retaining wall

The shape of fill material in a wrapped retaining wall has to remain as stable as possible. We do not want the 'burrito effect'. It is common practice to apply a fill material with sufficient fine grains for this purpose. It was proposed to apply granular material 0/20 instead of the more common 0/31.5 mm. In practice, this has been tried, as well as 2/20 mm.

### Excavations

Figure 5 and Figure 6 give geosynthetic solutions for excavations. The traditional under-water concrete was replaced by geosynthetics. The installation and connections of a geosynthetic to a sheet pile wall needs some further development. It will be necessary to cover the membrane with a sufficiently thick fill.

The excavation wall can be constructed as a soldier pile wall by combining vertical precast piles and a vertical membrane. Photo 2 shows an example of the membrane wall that is currently under construction in Leeuwarden, Netherlands.



Figure 5 Excavation: Alternative for under water concrete

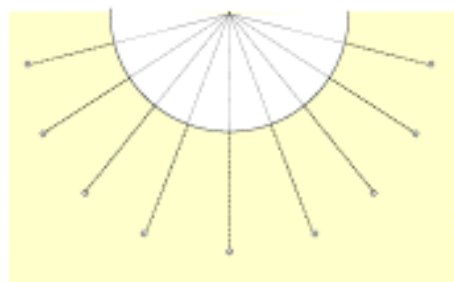


Figure 6 Excavation: water tight geotextile reinforcement + sealing



Photo 2 Installation of a membrane wall in Leeuwarden, Netherlands - Source: Combination Grutte Fier (Mobilis, De Vries, Van Gelder and Oosterhof Holman).

### Drainage – geogrid strips as reinforcement

Figure 7 and Figure 8 show diagonal drainage that acts as reinforcement. The drainage is installed perpendicular on the expected shear planes (Bishop) and therefore reinforces the construction. The folding of the reinforcement during compaction needs attention. When excavating, the excavated strips can be installed again to give an extra nailing.

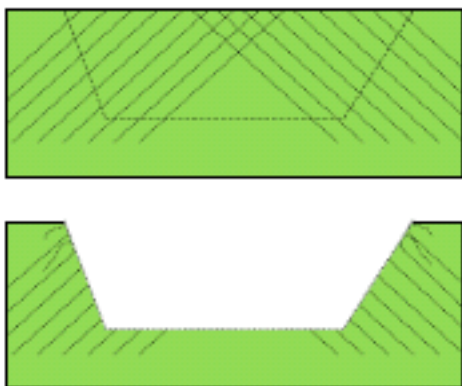


Figure 7 Excavation in reinforced and drained soil

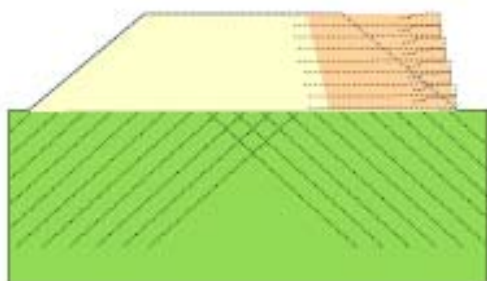


Figure 8 Diagonal drains: reinforcement sub grade and acceleration of drainage

### Wave overtopping

Geosynthetics can improve the erosion resistance of the inner slope of levees considerably. The result is that wave overtopping is less harmful. When the inner slope is protected properly, it should be possible to reduce the levee height.

### Geosynthetics in levees

In several countries, such as the United States, geosynthetics are applied to improve the stability of the slopes of levees or even dams. In the Netherlands, however, this rarely occurs. Engineers tend to believe that this is due to conservatism of the clients. But it is important to realise that the risk (risk · result) of a levee is much higher than of an average retaining wall. Therefore, an investigation on the application of geosynthetics in levees could save millions. A welcome contribution in surviving the crisis!

### Thanks to:

Han de Jong of Mobilis for supplying the nine moulds, the materials and the IGS-Dutch-Chapter-Challenge-Cup! Also thanks to the unknown person who left the chicken wire and straw lying around in the workshop area.

*Reported by:*

*Suzanne J.M. van Eekelen (Deltares, Technical University Delft), Piet G. van Duijnen (Huesker, formerly Mobilis), Wim Voskamp (Voskamp Business Consultancy), Theo Huybregts (Geologics)*



# ΠΡΟΣΕΧΕΙΣ ΕΚΔΗΛΩΣΕΙΣ ΓΕΩΤΕΧΝΙΚΟΥ ΕΝΔΙΑΦΕΡΟΝΤΟΣ ΣΤΗΝ ΕΛΛΑΔΑ



## 2<sup>ο</sup> ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΦΡΑΓΜΑΤΩΝ ΚΑΙ ΤΑΜΙΕΥΤΗΡΩΝ

Σχεδιασμός – Διαχείριση – Περιβάλλον  
Αθήνα, 7 - 8 Νοεμβρίου 2013  
<http://waterstorage2013.com>

Μετά το πολύ επιτυχημένο πρώτο συνέδριο στη Λάρισα το 2008, η Ελληνική Επιτροπή Μεγάλων Φραγμάτων (ΕΕΜΦ) διοργανώνει το **2ο Πανελλήνιο Συνέδριο Φραγμάτων και Ταμιευτήρων στις 7 & 8 Νοεμβρίου του 2013 στην Αθήνα, στην Αίγλη Ζαππείου.**

Η απαίτηση για ορθολογική διαχείριση του υδατικού δυναμικού είναι μεγαλύτερη παρά ποτέ. Στις αυξανόμενες ανάγκες για ύδρευση, άρδευση, ενέργεια και αντιπλημμυρική προστασία προστίθεται ολοένα και πιο επιτακτικά η ανάγκη για προστασία και επανατροφοδότηση των υπόγειων υδροφόρων και η αναβάθμιση και προστασία των ποτάμιων και λιμναίων οικοσυστημάτων.

Ο ρόλος των φραγμάτων και ταμιευτήρων είναι κομβικός για την αντιμετώπιση των ανωτέρω. Η χώρα μας, αν και καθυστέρησε σημαντικά στην εκμετάλλευση του υδατικού δυναμικού, έχει κατασκευάσει τις τελευταίες δεκαετίες μεγάλο αριθμό φραγμάτων, και ταμιευτήρων, ενώ ένας μεγάλος αριθμός νέων έργων είναι τώρα σε φάση μελέτης ή υλοποίησης.

Τα φράγματα και οι ταμιευτήρες είναι πολύπλοκα έργα με πολλές συνιστώσες που δημιουργούν αυξημένες απαιτήσεις κατά το σχεδιασμό, την υλοποίηση και τη λειτουργία τους. Ο σεβασμός στο περιβάλλον, η ολοκληρωμένη διαχείριση των υδατικών πόρων, η χρήση νέων τεχνολογιών, η μακροχρόνια συμπεριφορά και ασφάλεια, η ευθύνη του κυρίου του έργου ή του διαχειριστή για την ασφαλή λειτουργία των έργων, είναι θέματα στα οποία θα επικεντρωθούν οι εργασίες του συνεδρίου.

Το συνέδριο στοχεύει στην παρουσίαση, ανάδειξη και συζήτηση των ανωτέρω ζητημάτων και απευθύνεται σε όλους όσοι με την μελέτη, κατασκευή και διαχείριση έργων φραγμάτων και ταμιευτήρων.

### Θεματολόγιο

#### 1. Φράγματα και Ολοκληρωμένη Διαχείριση Υδατικών Πόρων

- Ο ρόλος των ταμιευτήρων στην ολοκληρωμένη διαχείριση υδατικών πόρων
- Ταμιευτήρες πολλαπλού σκοπού
- Αντιπλημμυρική προστασία
- Τεχνικο-οικονομικά κριτήρια υλοποίησης νέων φραγμάτων

- Ο ρόλος των φραγμάτων στον ενεργειακό σχεδιασμό - Σύγχρονες τάσεις και τεχνολογικές εξελίξεις
- Ταμιευτήρες - Αντλητικά και υβριδικά συστήματα παραγωγής ενέργειας

#### 2. Εξελίξεις στις Μεθόδους Σχεδιασμού & Κατασκευής

- Υλικά κατασκευής φραγμάτων - Μέθοδοι κατασκευής - Νέες τεχνικές
- Εκτίμηση, επιλογή και αναθεώρηση πλημμυρών σχεδιασμού
- Σχεδιασμός και αναβάθμιση υπερχειλιστών
- Έργα στεγάνωσης και αποστράγγισης φράγματος και θεμελίωσης
- Η επιρροή των γεωλογικών συνθηκών στον σχεδιασμό
- Εξελίξεις στον γεωτεχνικό σχεδιασμό
- Εξελίξεις στον αντισεισμικό σχεδιασμό
- Εξελίξεις στον Η/Μ εξοπλισμό

#### 3. Ασφάλεια Φραγμάτων και Ταμιευτήρων

- Κανονισμοί μελέτης, κατασκευής και λειτουργίας φραγμάτων
- Η πρόταση της ΕΕΜΦ για την σύνταξη εθνικού κανονισμού ασφαλείας φραγμάτων
- Αποτίμηση της διακινδύνευσης φραγμάτων (risk assessment)
- Δημόσιοι και ιδιωτικοί φορείς εμπλεκόμενοι στη διαχείριση φραγμάτων - θέματα οργάνωσης και τεχνικής ικανότητας
- Κίνδυνοι σχετιζόμενοι με προβλήματα οργάνωσης του κυρίου - διαχειριστή του έργου
- Απαιτήσεις παρακολούθησης συμπεριφοράς
- Ασφάλεια ταμιευτήρα (ευστάθεια πρανών, εκτεταμένες διαρροές κτλ)
- Αναλύσεις θραύσης φράγματος και επιπτώσεις
- Μακροχρόνια συμπεριφορά, γήρανση των έργων και εργασίες αποκατάστασης
- Κίνδυνοι οφειλόμενοι σε αστοχίες Η/Μ εξοπλισμού
- Παρουσίαση πρόσφατων συμβάντων ή περιστατικών
- Φράγματα, ταμιευτήρες και δημόσια ασφάλεια
- Ασφαλής παροχέτευση εκτάκτων πλημμυρικών παροχών κατάντη - απαιτήσεις οριοθέτησης της κοίτης

#### 4. Φράγματα, Ταμιευτήρες και Περιβάλλον

- Φιλικές προς το περιβάλλον κατασκευές φραγμάτων και ταμιευτήρων
- Φράγματα, ταμιευτήρες και αειφορία
- Περιβαλλοντική και κοινωνικά αποδοχή φραγμάτων και ταμιευτήρων - Συμμετοχικές διαδικασίες στο σχεδιασμό και υλοποίηση
- Περιορισμός υδρομορφολογικών αλλοιώσεων και αισθητική αποκατάσταση περιβάλλοντος
- Αρχιτεκτονικός σχεδιασμός φραγμάτων και συναφών κατασκευών
- Τα φράγματα ως μέρος της πολιτιστικής κληρονομιάς
- Εμπλουτισμός και αποκατάσταση υπόγειων υδροφόρων - Δημιουργία υγροβιότοπων κ.λπ.
- Χρονική εξέλιξη των ποιοτικών χαρακτηριστικών των ταμιευτήρων - Διατήρηση και βελτίωση ποιότητας υδατικών πόρων
- Φερτές ύλες

#### 5. Παρουσίαση έργων

Κρίσιμες ημερομηνίες για την αποστολή εργασιών:

- Υποβολή περιλήψεων: **15 Δεκεμβρίου 2012**
- Αποδοχή περιλήψεων: **15 Ιανουαρίου 2013**
- Υποβολή πλήρους κειμένου: **30 Απριλίου 2013**
- Αποδοχή πλήρους κειμένου: **30 Ιουνίου 2013**

Οδηγίες για την αποστολή των περιλήψεων θα βρείτε στη ιστοσελίδα της ΕΕΜΦ [www.eemf.gr](http://www.eemf.gr).

Οι περιλήψεις θα αποστέλλονται ηλεκτρονικά στην διεύθυνση της ΕΕΜΦ [eemf@eemf.gr](mailto:eemf@eemf.gr).

ΕΛΛΗΝΙΚΗ ΕΠΙΤΡΟΠΗ ΜΕΓΑΛΩΝ ΦΡΑΓΜΑΤΩΝ, μέσω ΔΕΗ – ΔΥΗΠ, Αγησιλάου 56-58, 104 36 ΑΘΗΝΑ, ΤΟΤ. 210 - 5241223, Η/Δ : [eemf@eemf.gr](mailto:eemf@eemf.gr), [www.eemf.gr](http://www.eemf.gr)



## 6<sup>ο</sup> ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΛΙΜΕΝΙΚΩΝ ΕΡΓΩΝ Αθήνα 11 - 14 Νοεμβρίου 2013

Το Εργαστήριο Λιμενικών Έργων του Ε.Μ.Π. διοργανώνει το 6<sup>ο</sup> ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΛΙΜΕΝΙΚΩΝ ΕΡΓΩΝ. Θα πραγματοποιηθεί στην Αθήνα στις 11-14 Νοεμβρίου 2013.

Αντικείμενο του Συνεδρίου είναι η παρουσίαση των νεότερων εξελίξεων στο χώρο των επιστημών και των τεχνολογιών που σχετίζονται με τα Λιμενικά Έργα και ειδικότερα την έρευνα, τον σχεδιασμό, την μελέτη, κατασκευή, προστασία, συντήρηση, διαχείριση, στις επιπτώσεις στο περιβάλλον καθώς και η ενημέρωση, η ανταλλαγή απόψεων και η προώθηση της τεχνογνωσίας στους τομείς αυτούς. Στόχος του είναι η ενημέρωση, η ανταλλαγή απόψεων και η προώθηση της τεχνογνωσίας.

Απευθύνεται στους ερευνητές, μελετητές, κατασκευαστές, ΑΕΙ, δημόσιους φορείς, ΟΤΑ, Ο.Λ., Λιμενικά Ταμεία, περιβαλλοντικές οργανώσεις και υπηρεσίες που ενδιαφέρονται και ασχολούνται με τα Λιμενικά Έργα, τους οποίους και προσκαλεί να παρουσιάσουν το έργο και τις εμπειρίες τους.

### Θεματολόγιο

- Περιβαλλοντικά μεγέθη σχεδιασμού και κατασκευής λιμενικών έργων
- Σχεδιασμός λιμένων, μελέτη και κατασκευή λιμενικών έργων
- Χωροθέτηση λειτουργιών, διαμόρφωση λιμενικής ζώνης
- Αστοχίες, βλάβες λιμενικών έργων. Επιθεώρηση, αποκατάσταση, συντήρηση
- Μελέτη λιμένων σε φυσικό προσομοίωμα
- Περιβαλλοντικές επιπτώσεις από την κατασκευή και λειτουργία λιμένων
- Το Ελληνικό Λιμενικό Σύστημα υπό το πρίσμα της Ευρωπαϊκής οικονομικής κρίσης
- Διαχείριση, διοίκηση, λειτουργία λιμένων. Θεσμικό πλαίσιο. Ιδιωτικοποιήσεις δραστηριοτήτων.

Οι ενδιαφερόμενοι για περισσότερες πληροφορίες μπορούν να απευθύνονται στο Εργαστήριο Λιμενικών Έργων Ε.Μ.Π. τηλ.: 210.7722367, 210.7722375, 210.7722371, fax: 210.7722368 (κες Θ. Γιαντσή, Ι. Φατούρου).

e-mail: [lhv@central.ntua.gr](mailto:lhv@central.ntua.gr)



**30 September - 3 October 2014, Athens, Greece**  
[www.eetc2014athens.org](http://www.eetc2014athens.org)

It is our pleasure to inform you that the Greek Tunnelling Society is organizing the 2<sup>nd</sup> Eastern European Tunnelling Conference in Athens on September 28 - October 1 2014 (EETC2014, Athens).

The Eastern European Tunnelling Conference is a biennial regional traveling conference. It aims to promote the sharing of knowledge, experience, skills, ideas and achievements in the design, financing and contracting, construction, operation and maintenance of tunnels and other underground facilities among the countries of Eastern Europe, on an organized basis and with agreed aims. EETC2014 aims mainly to bring together colleagues from Eastern Europe but people from the rest of the world are also welcome.

The theme of EETC2014 Athens is:

**"Tunnelling in a Challenging Environment"**  
*Making tunnelling business in difficult times*

The construction of underground projects is becoming increasingly demanding as new challenges are emerging in every aspect and sector of this multidisciplinary and multifarious business. Further to the usual geological, geotechnical, structural and operational challenges, we are now facing a difficult business and financial environment, which requires the deployment of even more intelligent and effective tools and solutions.

I really do hope that the EETC2014 Athens will contribute and further facilitate the growth of the tunnelling business and will be a forum for scientific and professional collaboration.

### TOPICS:

- Innovative methods for Analysis and Design
- Tunnelling in difficult ground conditions
- Conventional urban or shallow tunnelling
- Mechanized tunnelling
- Hydraulic tunnels
- Underground complexes
- Caverns for Hydropower or Storage
- Pipe jacking and microtunnelling
- Innovations in tunnelling construction technology
- Tunnels and shafts for mining
- Rehabilitation and repair
- Safety and security in tunnels and tunnelling
- Contractual and financial issues
- Education and training
- Case histories
- Underground space use
- Tunnels and monuments

# ΠΡΟΣΕΧΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ

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

13<sup>th</sup> International Conference of the Geological Society of Greece, September 5-8 2013, Chania, Greece, [www.egc13.gr](http://www.egc13.gr)

Géotechnique Symposium in Print on Bio- and Chemo-Mechanical Processes in Geotechnical Engineering, [www.elabs10.com/content/2010001471/SIP%202013.pdf](http://www.elabs10.com/content/2010001471/SIP%202013.pdf)

EUROCK 2013 ISRM European Regional Symposium "Rock Mechanics for Resources, Energy and Environment", 21-26 September 2013, Wroclaw, Poland [www.eurock2013.pwr.wroc.pl](http://www.eurock2013.pwr.wroc.pl)

International Symposium & 9th Asian Regional Conference of IAEG Global View of Engineering Geology and the Environment, 24 - 25 September, 2013, Beijing, China, [www.iaegasia2013.com](http://www.iaegasia2013.com)

Piling & Deep Foundations Asia, 25 - 26 September, 2013, Kuala Lumpur, Malaysia, [www.pilingdeepfoundationsasia.com](http://www.pilingdeepfoundationsasia.com)

Sardinia\_2013 14<sup>th</sup> International Waste Management and Landfill Symposium, 30 September - 4 October 2013, Sardinia, Italy, [www.sardiniasymposium.it](http://www.sardiniasymposium.it)

HYDRO 2013 International Conference and Exhibition Promoting the Versatile Role of Hydro, 7 to 9 October 2013, Innsbruck, Austria, [www.hydropower-dams.com/hydro-2013.php?c\\_id=88](http://www.hydropower-dams.com/hydro-2013.php?c_id=88)

VAJONT 2013 - International Conference Vajont, 1963 - 2013 Thoughts and Analyses after 50 years since the catastrophic landslide, 8-10 October, 2013, Padova, Italy, <http://www.vajont2013.info/vajont-pd>

The 5th International Conference on Geoinformation Technologies for Natural Disaster Management (GIT4NDM 2013), October 9 - 11, Ontario, Canada, [www.igrdg.com/5thGit4NDM.php](http://www.igrdg.com/5thGit4NDM.php)

The 1st International Symposium on Transportation Soil Engineering in Cold Regions - A Joint Conference with the 10<sup>th</sup> SHAHUNIANTS Lecture, October 10-11, 2013, Xining, China, <http://subgrade.sinaapp.com>

International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures, 13-16 October, 2013, Bologna, Italy, [www.civil.columbia.edu/bologna2013](http://www.civil.columbia.edu/bologna2013)

The Mediterranean Workshop on Landslides: Landslides in hard soils and weak rocks - an open problem for Mediterranean countries, 21 and 22 October, 2013, Naples, Italy, [www.mwl.unina2.it](http://www.mwl.unina2.it)

International Conference Geotechnics in Belarus: Science and Practice, 23-25 October 2013, Minsk, Belarus, [geotechnika2013@gmail.com](mailto:geotechnika2013@gmail.com) [belgeotech@tut.by](mailto:belgeotech@tut.by)

GeoME 2013 6th International Conference GEOSYNTHETICS Middle East, 29 - 30 October 2013, Abu Dhabi, UAE [www.geosyntheticsme.com](http://www.geosyntheticsme.com)

Hydropower 2013--CHINCOLD 2013 Annual Meeting and the 3rd International Symposium on Rockfill Dams, 1-3 November 2013, Kunming, China [www.chincold.org.cn/dams/special/A2022index\\_1.htm](http://www.chincold.org.cn/dams/special/A2022index_1.htm)

Problems and experience of the engineering protection of the urbanized territories and a safeguarding of the heritage under conditions of the geo-ecological risk, 5-7 November 2013, Kyiv, Ukraine, <http://new.sophiakievskia.org/en>

IRF 17th World Meeting & Exhibition, November 9 - 13, 2013, Riyadh, Saudi Arabia, [www.IRF2013.org](http://www.IRF2013.org)

6th Annual Bridges Middle East & Tunnels Middle East, 11 - 13 November, 2013 - Doha, Qatar, [www.bridgesme.com](http://www.bridgesme.com)

Workshop Dams: Incidents and Accidents - What Can We Learn?", November 11-13, 2013, Stockholm, Sweden, [www.conferencemanager.dk/swedcold](http://www.conferencemanager.dk/swedcold)

6<sup>o</sup> ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΛΙΜΕΝΙΚΩΝ ΕΡΓΩΝ, Αθήνα 11 - 14 Νοεμβρίου 2013, [lhv@central.ntua.gr](mailto:lhv@central.ntua.gr)

GEOMATE 2013 3<sup>rd</sup> International Conference on Geotechnique, Construction Materials & Environment, November 13-15, 2013, Nagoya, Japan, [www.geomat-e.com](http://www.geomat-e.com)

International Conference Built Heritage 2013 - Monitoring Conservation Management, 18-20 November 2013, Milano, Italy, [www.bh2013.polimi.it](http://www.bh2013.polimi.it)

GEOAFRICA2013 Geosynthetics for Sustainable Development in Africa - 2nd African Regional Conference on Geosynthetics, 18-20 November 2013, Accra, Ghana, <http://geoafrica2013.com>

10th International Symposium of Structures, Geotechnics and Construction Materials, 26-29 November 2013, Santa Clara, Cuba, [ana@uclv.edu.cu](mailto:ana@uclv.edu.cu), [quevedo@uclv.edu.cu](mailto:quevedo@uclv.edu.cu), [www.uclv.edu.cu](http://www.uclv.edu.cu)



**Piling & Deep Foundations 2013**  
**Design, Testing & Insertion of Foundations on**  
**Time & Within Budget**  
**27 - 28 November 2013, Sydney, Australia**  
[www.pilingtechniques.com.au](http://www.pilingtechniques.com.au)

This year's event will discuss the latest challenges, opportunities and solutions to optimise site investigation and ground improvement techniques which will assist you in selecting, designing and installing the best pile types for your projects.

The event will be structured with the following themes:

- Designing, testing and implementing sustainable deep-ground piling foundations that will ensure the infallible integrity for the life of the structure
- Designing cost effective means for constructing deep foundations
- Improving the safety of deep foundations in difficult geotechnical conditions
- Overcoming base resistance through innovative testing systems
- Solving piling problems during the construction phase
- Educating all stakeholders involved in construction projects the importance of piling and deep foundations
- Key national and international piling case studies

Questions? Contact us on +61 2 9229 1000 or email [registration@iqpc.com.au](mailto:registration@iqpc.com.au) now!



International Conference on Geotechnics for Sustainable Development, 28-29 November 2013, Hanoi, Vietnam, [www.geotechn2013.vn](http://www.geotechn2013.vn)

ISAFE2013 International Symposium on Advances in Foundation Engineering, 5-6 December 2013, Singapore, <http://rpsonline.com.sg/isafe2013>

Arabian Tunnelling Conference & Exhibition, 10-11 December 2013, Dubai, United Arab Emirates, <http://uae-atc2013.com>

8th International Conference Physical Modelling in Geotechnics 2014, 14-17 January 2014, Perth, Australia, <http://icpmg2014.com.au>

ANDORRA 2014 14th International Winter Road Congress 2014, 4-7 February 2014, Andorra la Vella (Andorra), [www.aipcrandorra2014.org](http://www.aipcrandorra2014.org)

Fifth International Conference on Water Resources and Hydropower Development in Asia, 11 to 13 March 2014, Colombo, Sri Lanka, [http://www.hydropower-dams.com/ASIA-2014.php?c\\_id=89](http://www.hydropower-dams.com/ASIA-2014.php?c_id=89)

World Tunnel Congress 2014 and 40th ITA General Assembly "Tunnels for a better living", 9 - 15 May 2014, Iguassu Falls, Brazil, [www.wtc2014.com.br](http://www.wtc2014.com.br)

CPT'14 3rd International Symposium on Cone Penetration Testing, 13-14 May 2014, Las Vegas, Nevada, U.S.A., [www.cpt14.com](http://www.cpt14.com)

International Conference on Piling & Deep Foundations, 21-23 May 2014, Stockholm, Sweden, [www.dfi-effc2014.org](http://www.dfi-effc2014.org)

EUROCK 2014 ISRM European Regional Symposium Rock Engineering and Rock Mechanics: Structures on and in Rock Masses, 27-29 May 2014, Vigo, Spain, [www.eurock2014.com](http://www.eurock2014.com)

Geoshanghai 2014, International Conference on Geotechnical Engineering, 26 - 28 May 2014, Shanghai, China, [www.geoshanghai2014.org](http://www.geoshanghai2014.org)

World Landslide Forum 3, 2 - 6 June 2014, Beijing, China, <http://wlf3.professional.com>

8th European Conference "Numerical Methods in Geotechnical Engineering" NUMGE14, Delft, The Netherlands, 17-20 June 2014, [www.numge2014.org](http://www.numge2014.org)

2<sup>nd</sup> International Conference on Vulnerability and Risk Analysis and Management & 6<sup>th</sup> International Symposium on Uncertainty Modelling and Analysis - Mini-Symposium Simulation-Based Structural Vulnerability Assessment and Risk Quantification in Earthquake Engineering, 13-16 July 2014, Liverpool, United Kingdom, <http://www.icvram2014.org>

GeoHubei 2014 International Conference Sustainable Civil Infrastructures: Innovative Technologies and Materials, July 20-22, 2014, Hubei, China, <http://geohubei2014.geoconf.org>

ICITG 2014 Second International Conference on Information Technology in Geo-Engineering, 21-22 July 2014, Durham, UK, [www.icitg.dur.ac.uk](http://www.icitg.dur.ac.uk)

Second European Conference on Earthquake Engineering and Seismology, 24-29 August 2014, Istanbul, Turkey, [www.2eeesistanbul.org](http://www.2eeesistanbul.org)

TC204 ISSMGE International Symposium on "Geotechnical Aspects of Underground Construction in Soft Ground" - IS-Seoul 2014, 25-27 August 2014, Seoul, Korea, [csyoo@skku.edu](mailto:csyoo@skku.edu)

International Symposium on Geomechanics from Micro to Macro (TC105), 01 - 03 September 2014, Cambridge, United Kingdom, [ks207@cam.ac.uk](mailto:ks207@cam.ac.uk)

JUBILEE CONFERENCE 50th Anniversary of Danube-European Conferences on Geotechnical Engineering Geotechnics of Roads and Railways, 9 - 11 September 2014, Vienna, Austria, [www.decge2014.at](http://www.decge2014.at)

IAEG XII CONGRESS Torino 2014 Engineering Geology for Society and Territory, IAEG 50th Anniversary, September 15-19, 2014, Torino, Italy, [www.iaeg2014.com](http://www.iaeg2014.com)

10th International Conference on Geosynthetics - 10ICG, Berlin, Germany, 21 - 25 September 2014 [www.10icg-berlin.com](http://www.10icg-berlin.com)

14th International Conference of the International Association for Computer Methods and Advances in Geomechanics (14IACMAG), September 22 - 25, 2014, Kyoto, Japan, [www.14iacmag.org](http://www.14iacmag.org)

EETC 2014 ATHENS 2nd Eastern European Tunnelling Conference, 28 September - 1 October 2014, Athens, Greece, [www.eetc2014athens.org](http://www.eetc2014athens.org)

International Congress Tunnels and Underground Space risks & opportunities, 13-15 October 2014, Lyon, France, [www.congres.aftes.asso.fr/en/content/invitation](http://www.congres.aftes.asso.fr/en/content/invitation)

ARMS 8 - 8th ISRM Rock Mechanics Symposium, 14-16 October 2014, Sapporo, Japan, [www.rocknet-japan.org/ARMS8/index.htm](http://www.rocknet-japan.org/ARMS8/index.htm)

9<sup>th</sup> International Conference on Structural Analysis of Historic Constructions, 14 - 17 October 2014, Mexico City, Mexico, [www.linkedin.com/groups/SAHC-2014-Mexico-City-3930057.S.213150607](http://www.linkedin.com/groups/SAHC-2014-Mexico-City-3930057.S.213150607)

1st International Conference on Discrete Fracture Network Engineering, October 19 - 22, 2014, Vancouver, British Columbia, Canada, [www.dfne2014.ca](http://www.dfne2014.ca)



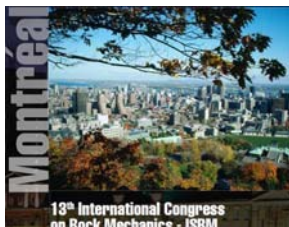
7th International Congress on Environmental Geotechnics,  
10-14 November 2014, Melbourne, Australia,  
[www.7iceg2014.com](http://www.7iceg2014.com)



**Innovative Geotechnics for Africa  
27 - 30 April 2015, Hammamet, Tunisia**

Regional African Conference

Contact person: Mehrez Khemakhem  
Address: Tunis, Tunisia  
Phone: +216 25 956 012  
E-mail: [mehrez.khemakhem@gmail.com](mailto:mehrez.khemakhem@gmail.com)



**13<sup>th</sup> ISRM International Congress on Rock Mechanics  
Innovations in Applied and Theoretical  
Rock Mechanics  
10 - 13 May 2015, Montreal, Canada**

The Congress of the ISRM "Innovations in Applied and Theoretical Rock Mechanics" will take place on 29 April to 6 May 2015 and will be chaired by Prof. Ferri Hassani.

Contact Person: Prof. Ferri Hassani  
Address: Department of Mining and Materials Engineering  
McGill University  
3450 University, Adams Building, Room 109  
Montreal, QC, Canada H3A 2A7  
Telephone: + 514 398 8060  
Fax: + 514 398 5016  
E-mail: [ferri.hassani@McGill.ca](mailto:ferri.hassani@McGill.ca)



**World Tunnel Congress 2015  
and 41st ITA General Assembly  
Promoting Tunnelling in South East European  
(SEE) Region**

**22 - 28 May 2015, Dubrovnik, Croatia**  
<http://wtc15.com>

Contact  
ITA Croatia - Croatian Association for Tunnels and Under-  
ground Structures  
Davorin KOLIC, Society President  
Trnjanska 140  
HR-10 000 Zagreb  
Croatia  
[info@itacroatia.eu](mailto:info@itacroatia.eu)



ISFOG 2015 3<sup>rd</sup> International Symposium on Frontiers in  
Offshore Geotechnics, Oslo, Norway, 10-12 June 2015,  
[www.isfog2015.no](http://www.isfog2015.no)



**XVI ECSMGE 2015**

**16<sup>th</sup> European Conference on Soil Mechanics  
and Geotechnical Engineering  
"Geotechnical Engineering for  
Infrastructure and Development"  
13 - 17 September 2015, Edinburgh, UK**  
[www.xvi-ecsmge-2015.org.uk](http://www.xvi-ecsmge-2015.org.uk)

I am delighted to invite you to join us at the XVI European Conference on Soil Mechanics and Geotechnical Engineering in September 2015. This is the latest in a long and distinguished line of such conferences to be held in Europe's great cities. It is the first to be held in Scotland and being located in the heart of Edinburgh, the capital, the venue is the equal of any of those of the past.

Our conference theme, Geotechnical Engineering for Infrastructure and Development, is broad and inclusive. We believe that this presents a multitude of opportunities for all parts of the industry (including consultants, contractors and materials and equipment manufacturers, as well as academics) and at all career stages to attend and to present papers.

The very active local geotechnical scene is reflected by the fact that we have already confirmed a technical visit to Scotland's current landmark project, the Queensferry Crossing, which includes substantial earthworks and major foundation works both onshore and offshore.

I will look forward to welcoming you to Edinburgh – one of Europe's truly great cities – in September 2015.

Dr Mike Winter  
Chair of the Conference Organising Committee

**Topics for Abstract Submission**

The broad and inclusive nature of the conference presents a multitude of opportunities for authors from all parts of the industry (including consultants; contractors; academics;



and materials and equipment manufacturers, owners and operators) and at all career stages to present papers within the Themes and Sub-Themes set out below. The organisers particularly welcome submissions that demonstrate technical innovation and/or the cost-effective use of resources. The effects of climate change may be introduced by authors to any of the Themes and Sub-Themes where it is relevant.

#### **Theme A: Infrastructure and Development**

A.1. Linear infrastructure – roads (paved and unpaved), highways and railways; bridge foundations and bridge scour; tunnels; canals and waterways; power lines; and pipelines.

A.2. Urban development and environment – mega cities and smart cities, historic buildings and monuments including their preservation and rehabilitation, reuse of foundations, changes in groundwater regime, basements, deep excavations, deep foundations, associated structures (such as retaining walls), and temporary works.

A.3. Non-linear infrastructure – underground works including mine workings, deep excavations including open cast working, power stations, hydro-electric installations, wind farms, nuclear installations, petro-chemical works, etc.

A.4. Near shore and offshore development, and the marine environment – site investigation, tidal and wave power generation, offshore wind farms, flood barrages, estuarine airports, ports, dredging, coastal defences, undersea pipelines, and oil and gas extraction installations.

A.5. Ground reinforcement and ground improvement – soil reinforcement, ground anchors, the use of geosynthetics, grouting, compaction/densification, thermal treatment (artificial ground freezing), bio-chemical geotechnics and other forms of ground treatment.

#### **Theme B: Slopes, Geohazards and Problematic Materials**

B.1. Slopes and earthworks – stability, cut slopes, natural slopes, earthworks and embankments, dams, tailings dams, slope failure repair and remediation, and flood protection works (including bunds, dykes and levees),.

B.2. Geohazards – landslides, earthquakes and seismic events, liquefaction, volcanoes, tsunamis, cavities (karst environments, old mine workings, anthropomorphically-induced events), and flooding. Hazard and risk assessment and disaster response, recovery and prevention.

B.3. Problematic materials and environments – glacial materials, peat, Aeolian deposits, soft soils, collapsing soils, swelling soils, weak rocks, permafrost and loss of permafrost, and tropical soils and highly weathered materials.

#### **Theme C: Environment, Water and Energy**

C.1. Environmental geotechnics – sustainability, archaeology, effects of climate and associated global change, contaminated land, waste management and containment, and reused/recycled geomaterials and reused/recycled materials for geotechnical engineering.

C.2. Groundwater, energy and hydrology – groundwater modelling, flow in porous media, groundwater abstraction and recharge, geothermal energy and ground source heat (including energy piles and heat pumps), groundwater treatment, contaminant transport, construction dewatering, and scour and erosion protection.

#### **Theme D: Investigation, Classification, Testing, and Forensics**

D.1. Investigation, Classification and Testing – ground models, three-dimensional mapping and modelling, geological and engineering geological mapping, field investigation, in situ testing, laboratory testing and classification.

D.2. Forensic geotechnical engineering – Geotechnical failures and criminology including case histories. It is appreciated that authors may wish to present case study information contained within their papers in a manner that prevents easy identification of sites and events.

#### **Theme E: Parameters and Modelling**

E.1. Selection of parameters and modelling – selection of parameters, physical and numerical modelling, soil structure interaction, and the behaviour of unsaturated and saturated materials.

#### **Theme F: Developments in Education and Practice**

F.1. Developments in geotechnical engineering education and practice – developments and new techniques in training and education, codes and standards (e.g. EC7 and EC8), BIM, GIS, smart instrumentation, engineering and project risk assessment management and mitigation, stakeholder collaboration, interactive design (observational method), and safety and serviceability.

#### **Contact**

Conference Secretariat  
In Conference Ltd  
4 – 6 Oak Lane  
Edinburgh  
EH4 1DT  
Tel: +44 (0)131 339 9235  
Fax: +44 (0)131 339 9798

If you would like to register your interest for XVI ECSMGE 2015 please send an email to [XVIECSMGE2015@in-conference.org.uk](mailto:XVIECSMGE2015@in-conference.org.uk)



Workshop on Volcanic Rocks & Soils, 24 - 25 September 2015, Isle of Ischia, Italy, [www.associazionegeotecnica.it](http://www.associazionegeotecnica.it)



**EUROCK 2015**  
**ISRM European Regional Symposium**  
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Contact person: Haraldur Sigursteinsson  
Address: Vegagerdin, Borgartún 7, IS-109, Reykjavik, Iceland  
Phone: +354 522 1236  
Fax: +354 522 1259  
E-mail: [has@vegagerdin.is](mailto:has@vegagerdin.is)



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# ΕΝΔΙΑΦΕΡΟΝΤΑ ΓΕΩΤΕΧΝΙΚΑ ΝΕΑ

## Top 10 Deepest Holes In The World

### 1. Chuquibambilla, Chile

The Chuquibambilla is an open pit copper mine in Chile. It is the mine with the largest total production of copper in the world, though it is not the largest copper mine. The mine is over 850 m deep.



### 2. Udachnaya Mine, Russia

The Udachnaya Mine is a diamond mine in Russia. The owners of the mine plan to cease its operation in 2010 in favour of underground mining. The mine was discovered in 1955 and is over 600 meters deep.



### 3. Sinkhole, Guatemala

In 2007 a 300 foot deep sinkhole swallowed a dozen homes in Guatemala, killing 2 and causing thousands to be evacuated. The sinkhole was caused by rain and an underground sewage flow.





#### 4. Diavik Mine, Canada

The Diavik Mine is a mine in the Northwest Territories of Canada. The mine (opened in 2003) produces 8 million carats or about 1,600 kg diamonds every year.



#### 6. Great Blue Hole, Belize

The Great Blue Hole is an underwater sinkhole off the coast of Belize. The hole is 1000 feet across and 400 feet deep. It was formed as a limestone cave during the last ice age.



#### 5. Mirny Diamond Mine, Siberia

The Mirny Diamond Mine is 525 m deep and has a diameter of 1,200 m. It was the first and one of the largest diamond mines in USSR. It is now abandoned. While it was still operational, it would take two hours for trucks to drive from the top to the bottom of the mine.





### 7. Bingham Canyon Mine, Utah

The Bingham Canyon Mine is a copper mine in the Oquirrh Mountains, Utah. The mine being 0.75 mile deep, 2.5 miles wide is the world largest manmade excavation.



### 9. Kimberley Diamond Mine, South Africa

The Kimberley Diamond Mine (also known as the Big Hole) holds the (disputed) title of being the largest hand-dug hole in the world. From 1866 to 1914 50,000 miners dug the hole with picks and shovels, yielding 2,722 kg of diamond. Attempts are being made to have it registered as a world heritage site.



### 8. Monticello Dam, California

The Monticello Dam is a dam in Napa County, California, United States most noted for its large circular spillway with rate of 46,400 cubic feet per second.



## 10. Darvaza Gas Crater, Turkmenistan

In 1971, geologists discovered a massive underground deposit of natural gas on this site. Whilst excavating the hole to tap the gas, the drilling rig collapsed leaving a massive hole. To prevent poisonous gasses from escaping, the hole was allowed to burn. It continues to burn to this day and had done so without ceasing!



(<https://www.youtube.com/watch?v=DSQ6GCEUqCg>)



## Passengers escape car swamped by landslide in China (video)

Footage has emerged of a dramatic landslide in China's Shaanxi Province in which four people escaped unharmed.

Earlier this month, a car was driving on a mountain pass when it was suddenly swamped by a landslide.

Two men escaped from the car once the initial landslide eased and two others were rescued soon after.

It has been reported that none of the car's occupants suffered major injuries.

Higher than normal rainfall has caused widespread flooding and landslides across China's Shaanxi Province all month.

(BBC News Asia, 28 July 2013,  
<http://www.bbc.co.uk/news/world-asia-23481329>)



## Reducing pile size 'key to cheaper offshore wind energy'

**DONG Energy has entered into cooperation with an academic consortium of three leading universities to work on an R&D project aimed at reducing the cost of energy from offshore wind turbines.**

The academic consortium, led by Oxford University and including Imperial College London and University College Dublin, will investigate how offshore wind turbine foundations can be designed more effectively in the future.

Project PISA (Pile Soil Analysis) is being carried out by an industry group headed by DONG Energy and involves RWE, Statoil, Statkraft, SSE, Scottish Power and Vattenfall.

PISA is being run under the framework of the Carbon Trust Offshore Wind Accelerator (OWA), a UK government supported organisation established to promote offshore wind energy and reduce the cost of energy.

'The cost of energy from offshore wind turbines must be reduced,' said Bent Christensen, senior vice president in DONG Energy Wind Power. 'We expect to find significant savings by trimming monopile sizes and finding new ways of installing the foundations, amongst others. Consequently, we believe a significant contribution can come from this area towards our efforts of reducing the price of offshore wind power by 35-40 per cent by 2020.'

According to DONG Energy, the monopile foundation for a typical offshore wind turbine weighs approximately 600 tonnes and primarily consists of steel.

For a wind farm of 100 or more turbines this represents a substantial fabrication and installation cost. The thickness of the steel used for each pile is about 100mm. If this can be reduced without compromising the load-carrying capacity and stiffness of the foundation, there will be significant savings made in developing offshore wind.

The industry group has entered into cooperation with Oxford University for 18 months, with the project commencing on 1 August 2013. The project will provide funding for a range of academic contributions including two full time post-doctoral research assistants and, in the longer term, will result in three PhD projects.

The aim of the working group is to find technological solutions to be implemented in time for the design and construction of the large Round 3 offshore wind projects in the UK. The working group will publish their final reports at the beginning of 2015.

(theengineer, 9 August 2013,  
<http://www.theengineer.co.uk/energy-and-environment/news/reducing-pile-size-key-to-cheaper-offshore-wind-energy/1016896.article#ixzz2bTOqTmOb>)





## Η γη «κατάπιε» ξενοδοχείο στη Φλόριντα των ΗΠΑ



Ένα πρωτοφανές περιστατικό, που θα μπορούσε να εξελιχθεί σε τραγωδία, εκτυλίχτηκε στη νύχτα της Κυριακής στη Φλόριντα των Ηνωμένων Πολιτειών.

Ξαφνικά, το έδαφος άνοιξε και μία τρύπα, διαμέτρου 18 μέτρων και βάθους 4,5 μέτρων, «κατάπιε» το μεγαλύτερο μέρος ξενοδοχειακού συγκροτήματος, που βρίσκεται κοντά στη Disney World.

Επί τόπου έσπευσαν άνδρες της πυροσβεστικής υπηρεσίας, οι οποίοι απομάκρυναν με ασφάλεια 36 τουρίστες που διέμεναν στο ξενοδοχείο, ενώ δεν αναφέρθηκε κανένας τραυματισμός.

Σε δηλώσεις τους στον τηλεοπτικό σταθμό WFTV, πελάτες του ξενοδοχείου είπαν ότι άκουσαν τριγμούς και είδαν τα τζάμια των παραθύρων να σπάνε, την ώρα που εγκατέλειπαν το κτήριο, ενώ ένοικος του ξενοδοχείου πήδηξε από το παράθυρο και μαζί με τη γυναίκα του και το παιδί τους, βγήκαν από το παράθυρο για να σωθούν.

### Florida's porous peninsula leads to sinkholes

Sections of a building at a resort near Orlando's theme park district collapsed into a sinkhole late Sunday, forcing the evacuation of 105 guests in the structure and also dozens of visitors staying in two adjacent three-story buildings.

(Mike Schneider / The Associated Press, August 13, 2013, <http://www.wftv.com/ap/ap/florida/floridas-porous-peninsula-leads-to-sinkholes/nZMWrl/>)



## Πέτρα 5 κιλών αποκολλήθηκε και έπεσε πάνω σε αυτοκίνητο στη σήραγγα Τοπολιών

Στη Μονάδα Εντατικής Θεραπείας του Νοσοκομείου Χανίων, σε κατάσταση καταστολής, νοσηλεύεται νεαρή γυναίκα η οποία τραυματίστηκε στο κεφάλι από πτώση πέτρας ενώ βρισκόταν μέσα σε αυτοκίνητο.

Το ατύχημα σημειώθηκε στις 8:45 το πρωί της Κυριακής και ενώ το αυτοκίνητο, στο οποίο επέβαινε μαζί με τρία άτομα, κατευθυνόταν από το Ελαφονήσι προς τα Χανιά.

Λίγο πριν την είσοδο της σήραγγας Τοπολιών, όπου υπάρχει φωτεινός σηματοδότης, το όχημα με τους τέσσερις επιβαίνοντες και περίπου άλλα 30 οχήματα περίμεναν να ανάψει το πράσινο για να μπουν μέσα στη σήραγγα. Εκείνη την

ώρα, πέτρα περίπου 5 κιλών αποκολλήθηκε και έπεσε πάνω στη γυάλινη οροφή του αυτοκινήτου, τραυματίζοντας την άτυχη γυναίκα στο κεφάλι, ενώ ελαφρά από θραύσματα γυαλιού τραυματίστηκε μια συνεπιβάτης της.



Στο σημείο έσπευσαν πυροσβεστικό όχημα από την Κίσσαμο, αστυνομικοί, καθώς και ασθενοφόρο του ΕΚΑΒ που μετέφερε τις δύο γυναίκες στο νοσοκομείο Χανίων.

Το πρωί, με εντολή του αντιπεριφερειάρχη Χανίων Αποστόλου Βουλγαράκη, μετέβη στην περιοχή κλιμάκιο μηχανικών της Αντιπεριφέρειας προκειμένου να πραγματοποιήσει αυτοψία και να συντάξει τεχνική έκθεση.

Όπως δήλωσε ο αντιπεριφερειάρχης Χανίων, δεν αποκλείεται για λόγους ασφαλείας να κλείσει ο δρόμος, ωστόσο αυτό θα αποφασιστεί μόλις του κοινοποιηθεί η έκθεση αυτοψίας των μηχανικών.

Στον δρόμο που συνέβη το περιστατικό πραγματοποιούνται έργα αντιστήριξης με την τοποθέτηση πλεγμάτων, καθώς και στο παρελθόν είχαν αναφερθεί καταπτώσεις βράχων.

Σύμφωνα με τον κ. Βουλγαράκη, το έργο έχει ολοκληρωθεί κατά 90% ενώ ο δρόμος άνοιξε προσωρινά, για τη θερινή περίοδο, προκειμένου να εξυπηρετηθούν οι συκοινωνιακές ανάγκες της περιοχής, καθώς μέσω της σήραγγας Τοπολιών συνδέονται, ως βασικός δρόμος πρόσβασης, τα Χανιά και η ευρύτερη περιοχή τους με το Ελαφονήσι.

Στο συγκεκριμένο σημείο, όπως δήλωσε ο αντιπεριφερειάρχης Χανίων, έχουν τοποθετηθεί πλέγματα σε ύψος από 5 έως και 20 μέτρα ενώ αναμένεται να τοποθετηθούν συμπληρωματικά πλέγματα ασφαλείας.

Όσον αφορά τα αίτια της πτώσης της πέτρας, ο κ. Βουλγαράκης εκτίμησε ότι οφείλεται σε ζώα τα οποία προφανώς εγκλωβίστηκαν από τα πλέγματα και στην προσπάθειά τους να βρουν διέξοδο προς τα πάνω, προκάλεσαν την κατολίπωση.

### Διακοπή κυκλοφορίας

Τη διακοπή της κυκλοφορίας στο τμήμα του δρόμου από την σήραγγα Τοπολιών προς το Ελαφονήσι θα ζητήσει από την Αστυνομική Διεύθυνση Χανίων, η Διεύθυνση Τεχνικών Έργων της Περιφερειακής Ενότητας Χανίων.

Μετά το ατύχημα με τον σοβαρό τραυματισμό νεαρής γυναίκας από πτώση πέτρας, κλιμάκιο μηχανικών της Περιφερειακής Ενότητας Χανίων πραγματοποίησε το πρωί αυτοψία στην περιοχή και, όπως ανακοινώθηκε, «η υπηρεσία θα προβεί στις απαιτούμενες ενέργειες για τη διακοπή της κυκλοφορίας στο παραπάνω τμήμα, λόγω αδυναμίας αστυνόμευσης της ανεξέλεγκτης βόσκησης».

Από το γραφείο του αντιπεριφερειάρχη Χανίων, Απόστολου Βουλγαράκη έγινε γνωστό ότι, «από την αυτοψία, οι μηχανικοί διαπίστωσαν ότι το ατύχημα δεν συνδέεται με τις ερ--

γασίες του χώρου κατασκευής του έργου αντιστήριξης πρανών και οφείλεται σε πτώση μικρού λίθου κάτω από τους προστατευτικούς φράκτες, που προκάλεσε ανεπιτήρητο ποίμνιο».

Στην ίδια ανακοίνωση επισημαίνεται, ακόμα, «ότι κανένα από τα μέτρα ασφαλείας, τα οποία είχαν ληφθεί παλαιότερα πριν την έναρξη του έργου για την αποφυγή ατυχημάτων από τη ρίψη λίθων, δεν έχει απομακρυνθεί μέχρι σήμερα από την περιοχή».

(Η ΚΑΘΗΜΕΡΙΝΗ, 19 Αυγούστου 2013, [http://www.kathimerini.gr/4dcgi/w\\_articles\\_kathremote\\_1\\_19/08/2013\\_514494](http://www.kathimerini.gr/4dcgi/w_articles_kathremote_1_19/08/2013_514494))



### Δάσος στα έγκατα Καταβόθρα 100 στρεμμάτων καταπίνει γιγάντια δέντρα

Τη μια στιγμή τα δέντρα ορθώνονται πάνω από τα νερά μιας φαινομενικά όμορφης λίμνης, την επόμενη στιγμή εξαφανίζονται μέσα στα νερά.

Μια γιγάντια τρύπα που εμφανίστηκε στο έδαφος τον Αύγουστο του 2012 συνεχίζει να μεγαλώνει στο Μπάγιου Κορν της επαρχιακής Λουιζιάνα, καταπίνοντας γη και δέντρα στην πορεία.

Η καταβόθρα, η οποία πιστεύεται ότι σχηματίστηκε λόγω των εργασιών εξόρυξης αλατιού, έχει φτάσει σε έκταση τα 100 στρέμματα, αναγκάζοντας περίπου 150 οικογένειες να εγκαταλείψουν τα σπίτια τους.



(Newsroom ΔΟΛ, 22 Αυγ. 2013, <http://news.in.gr/perierga/article/?aid=1231262161>)

#### Bayou Corne sinkhole

The **Bayou Corne sinkhole** was created from a collapsed underground salt dome cavern operated by Texas Brine Co. The sinkhole was discovered on August 3, 2012 and 350 nearby residents were advised to evacuate.<sup>[1]</sup> Scientists have stated that the evacuation order could last for years.<sup>[2]</sup> Most of the affected residents have received \$875 per week from Texas Brine Co.<sup>[3]</sup>

The sinkhole is at least 750 feet deep<sup>[4]</sup> and covers approximately 15 acres.<sup>[3]</sup> Drilling provided evidence showing that the sinkhole was caused when a cavern in the



Napoleonville Salt Dome experienced a side wall collapse—"something regulators and briners had previously considered impossible—highlighting, once again, how poorly understood the geology of salt caverns truly is," according to one report. Texas Brine has stated it has no idea why the cavern suddenly gave way, and is simply being a responsible entity by cleaning up the damage.<sup>[5]</sup>

Assumption Parish declared a state of emergency and Governor Bobby Jindal declared<sup>[6]</sup> a statewide state of emergency due to the threat of subsidence and subsurface instability that threatens the lives and property of the citizens of the state.

In May 2013, a class-action lawsuit for those impacted by the sinkhole was approved by a federal court.<sup>[3]</sup>

Texas Brine Co. has offered buyouts to those affected by the sinkhole and 44 of 92 buyout offers have been accepted as of July 2013.<sup>[7]</sup>

In August 2013, the sinkhole expanded to as large as 25 acres after swallowing several large trees within seconds.<sup>[8]</sup>

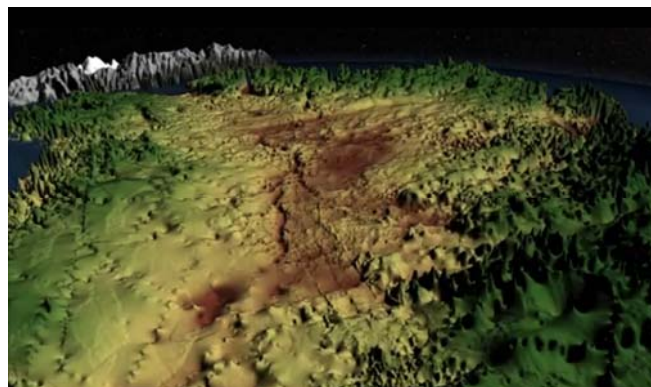
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([http://en.wikipedia.org/wiki/Bayou\\_Corne\\_sinkhole](http://en.wikipedia.org/wiki/Bayou_Corne_sinkhole))



## Αθέατα βάθη Φαράγγι στο μέγεθος του Γκραν Κάνιον κρυβό- ταν στους πάγους της Γροιλανδίας



Το φαράγγι, αθέατο σε όλη τη διάρκεια της ανθρώπινης ιστορίας, ξεκινά στο κέντρο του νησιού και καταλήγει στη βόρεια ακτή (Εικόνα, βίντεο: NASA)

Κι όμως, υπάρχουν ακόμα περιοχές της Γης που κανένα ανθρώπινο μάτι δεν τις έχει αντικρίσει: ένα γιγάντιο αλλά άγνωστο μέχρι σήμερα φαράγγι αποκαλύφθηκε από δορυφωρικά ραντάρ που σάρωσαν την κατεψυγμένη επιφάνεια της Γροιλανδίας.

Η γιγάντια σχισμή, αναφέρει διεθνής ομάδα ερευνητών στο περιοδικό Science, έχει μήκος τουλάχιστον 750 χιλιόμετρα, είναι δηλαδή μακρύτερο από το Γκραν Κάνιον στις ΗΠΑ, και σε ορισμένα σημεία έχει βάθος 800 μέτρα. Ξεκινά σχεδόν στο κέντρο της Γροιλανδίας και καταλήγει στις βόρειες ακτές της, στο φιόρντ του Παγετώνα Πέτερσμαν.

Το φαράγγι, κρυμμένο κάτω από σχεδόν δύο χιλιόμετρα πάγου, ακολουθεί την πορεία ενός αρχαίου δικτύου ποταμών



που έρεαν πριν από περίπου τέσσερα εκατομμύρια χρόνια, πριν ακόμα η Γροιλανδία μπει στην κατάψυξη.

«Θα μπορούσε να υποθέσει κανείς ότι ολόκληρη η επιφάνεια της Γης έχει εξερευνηθεί και χαρτογραφηθεί πλήρως» σχολίασε ο Τζόνναθαν Μπάμπερ, καθηγητής Φυσικής Γεωγραφίας στο Πανεπιστήμιο του Μπρίστολ και πρώτος συγγραφέας της δημοσίευσης». «Η έρευνά μας δείχνει ότι υπάρχουν ακόμα πολλά να ανακαλύψουμε».

Η ερευνητική ομάδα επεξεργάστηκε δεδομένα από ιπτάμενα και δορυφορικά ραντάρ που συλλέχθηκαν τις τελευταίες δεκαετίες από τη NASA και ερευνητές στη Βρετανία και τη Γερμανία.

Ορισμένα μήκη κύματος στην ακτινοβολία των ραντάρ διαπερνούν τον πάγο αλλά ανακλώνται από τα υποκείμενα πετρώματα. Ο χρόνος που απαιτείται προκειμένου να ανακλαστεί ένας παλμός ακτινοβολίας και να επιστρέψει στο ραντάρ αποκαλύπτει και το βάθος της περιοχής που εξετάζεται.

Παρόλο που το αρχαίο ποτάμι που σκάλισε το φαράγγι στο βράχο έχει πια εξαφανιστεί, οι ερευνητές εκτιμούν ότι το Γκραν Κάνιον της Γροιλανδίας παίζει ακόμα σημαντικό ρόλο, καθώς πιθανότατα μεταφέρει μέχρι τη θάλασσα το υγρό νερό που σχηματίζεται από το επιφανειακό λιώσιμο των παγετώνων.

(Newsroom ΔΟΛ, 29 Αυγ. 2013, <http://news.in.gr/science-technology/article/?aid=1231263116>)

# ΕΝΔΙΑΦΕΡΟΝΤΑ - ΣΕΙΣΜΟΙ

## In demolition, Cal State East Bay structure teaches a final lesson (Video)

Warren Hall, a 13-story beacon on the hill of California State University, East Bay, came down Saturday in a mix of smoke, dust and memories.

Fittingly for an academic building, it taught one last lesson, too.

As scores of VIPs watched in a parking lot near the top of the hill and hundreds more gathered just outside a police perimeter below in Hayward, Controlled Demolition Inc. of Phoenix, Md., set off imploding charges Saturday morning to transform the 42-year-old building into a 12,500-ton heap of concrete and steel in a mere 15 seconds.

The building was at the top of the CSU system's list of seismically unsafe structures for years, particularly due to its position near the shifty Hayward Fault.

It's that proximity to the fault that may allow Warren Hall - named after late Hayward businessman and campus backer E. Guy Warren - to teach one of its most enduring lessons for East Bay residents. The U.S. Geological Survey set up 600 seismographs in a two-mile hub-and-spoke design around the building to map branches of the fault.

"We can't predict an earthquake," one member of the USGS survey team said Saturday morning, but the implosion was expected to create something in the range of a 2.0 earthquake. That sensation would allow the agency to track how the implosion's energy traveled along the fault and its numerous known — and not-yet-discovered — branches.

(Ron Leuty / San Francisco Business Times, Aug 17, 2013, <http://www.bizjournals.com/sanfrancisco/blog/2013/08/csu-east-bay-warren-hall-demolition.html>)



## Insight: Arkansas lawsuits test fracking wastewater link to quakes

Tony Davis, a 54-year-old construction worker in central Arkansas, said he welcomed the boom in natural gas drilling that brought jobs and new businesses to his hometown starting about a decade ago. But that was before the earth shook.

In 2010 and 2011, the quiet farming town of Greenbrier, Arkansas, was rattled by a swarm of more than 1,000 minor earthquakes. The biggest, with a magnitude of 4.7, had its epicenter less than 1,500 feet from Davis's front porch. "This should not be happening in Greenbrier," Davis recalls thinking. He said the shaking damaged the support beams under an addition to his home.

Then came another surprise: University of Memphis and Arkansas Geological Survey scientists said the quakes were likely triggered by the disposal of wastewater from hydraulic fracturing - commonly known as fracking - into deep, underground wells. That finding prompted regulators from

the Arkansas Oil and Gas Commission to order several wells in the area shut down, and the earthquakes soon subsided.

It also prompted Davis and more than a dozen of his neighbors to file five lawsuits in federal court against Chesapeake Operating Inc, as the owner in 2010 of two injection wells near Davis' home, and BHP Billiton, which purchased Chesapeake's shale gas assets in 2011.

Another company, Clarita Operating LLC, owned a third well that was shut down, but the company went bankrupt and was dropped from the litigation in 2011.

Chesapeake and BHP both declined to comment, citing policies not to discuss ongoing litigation. In court documents they denied they were responsible for the quakes and for any damage the quakes may have caused.

The litigation marks the first legal effort to link earthquakes to wastewater injection wells, according to a search of the Westlaw database and interviews with legal experts, and the first attempt to win compensation from drilling companies for quake damage.

If any of the earthquake cases make it to a jury and the plaintiffs prevail, the outcome could spark additional litigation, since wastewater injection wells are used not only in fracking, but in other kinds of oil and gas drilling and geothermal energy production.

"The scientific community is really focusing on this issue so I imagine we will see more cases because of that," said Barclay Nicholson, a Houston lawyer who represents major oil and gas companies and is not involved in the Arkansas cases. "That's one of the new battlegrounds."

## LITIGATION WAVE

The first of the suits, filed in U.S. District Court in Eastern Arkansas, is scheduled to go to trial before Judge J. Leon Holmes next March, though the parties have been engaged in settlement talks, according to the court docket.

The Arkansas Independent Producers & Royalty Owners, an oil and gas industry group, acknowledges that scientists found a possible connection between the disposal wells and the spate of minor quakes in and around Greenbrier.

But J. Kelly Robbins, the group's executive vice president, said the companies had no way of knowing of any such link before wastewater injection began, and he said the operators shut the wells down when questions were raised.

"The appropriate state agencies stepped up, collected data, did what they were supposed to do and made a decision," Robbins said in an interview. "Industry abided by that and those wells were closed."

Robbins also said that while Arkansas is a traditional oil and gas producing state, fracking in the Fayetteville shale had brought billions of dollars of investment and boosted the state's natural gas production ninefold in seven years.

The earthquake cases are part of a wave of litigation that has followed the rapid expansion in natural gas production across the United States using fracking, a drilling process that deploys a highly pressurized mix of water and chemicals to break apart shale rock to release oil and gas.

Since 2009, some 40 civil suits related to fracking have been filed in eight states, claiming harm ranging from groundwater contamination to air pollution to excessive noise.

So far none of the lawsuits has made it to trial and about half have been dismissed or settled, with company lawyers mainly arguing that a link between fracking and contami-



nated groundwater or other environmental problems has not been proven, according to a Reuters analysis of legal filings.

The U.S. Environmental Protection Agency is expected to issue a major report on fracking and drinking water next year that could have an impact on these cases, lawyers closely following the litigation say.

#### FINDING FAULT

The Arkansas litigation does not target fracking itself, but rather the disposal of the leftover toxic, briny water known as "flowback." Millions of gallons of wastewater are typically trucked from the fracking site to the well site, where they are injected thousands of feet underground into porous rock layers, often for weeks or months at a time.

Seismologists say fracking can cause tiny "micro earthquakes" that are rarely felt on the surface. The process of disposing of the wastewater, though, can trigger slightly larger quakes when water is pumped near an already stressed fault, even one that hasn't moved in millions of years, according to the U.S. Geological Survey.

Only a handful of the 30,000 injection wells across the country have been suspected of causing earthquakes, the U.S. Geological Survey has said.

That rare event likely happened in central Arkansas, said Scott Ausbrooks, a geologist at the Arkansas Geological Survey in Little Rock who lives in Greenbrier and said he received calls from panicked neighbors when the quakes were rattling the town more than a dozen times a day.

Ausbrooks said he became interested in studying wastewater injection in the area because it had previously experienced some earthquakes, including a notable swarm in the 1980s.

He worked with Steve Horton from the University of Memphis Center for Earthquake Research and Information to set up seismic monitors around eight disposal wells. They found that 98 percent of the 2010-11 swarm of small quakes occurred within 3.7 miles of two of the wells.

"Given the strong spatial and temporal correlation between the two wells and seismic activity on the fault," Horton wrote in a study published in "Seismological Research Letters" in the March/April 2012 issue, "it would be an extraordinary coincidence if the recent earthquakes were not triggered by the fluid injection. For these reasons, I conclude that fluid injection triggered the recent seismicity."

It was only after the wastewater injection wells went online that scientists discovered a previously unknown fault, now called the Guy-Greenbrier fault, Ausbrooks and Horton said.

The Arkansas Oil and Gas Commission declared a permanent moratorium on new injection wells in almost 1,200 square miles (3,100 sq km) around the newly discovered fault. The commission now requires new wells to be between 1 mile and 5 miles from known faults, and it more closely monitors the amount and pressure of injected wastewater.

The EPA currently has no regulations relating to earthquakes and disposal wells - known as Class II wells - but the agency began working on a report addressing the issue in the wake of a spike in quakes in the central and eastern United States.

In a November 2012 draft report, the EPA said it was studying "injection-induced seismicity" in central Arkansas; north Texas; Braxton County, West Virginia; and Youngstown, Ohio.

In Texas, operators in 2009 voluntarily plugged two disposal sites after regulators started investigating whether the wells touched off several quakes around the Dallas Fort-Worth International Airport. Virginia's Department of Environmental Protection in 2010 reduced the rate of wastewater injection allowed after a series of small tremors. And in Ohio, officials shut down five injection wells in Youngstown following a 4.0 earthquake on New Year's Eve 2011 in an area that had never experienced seismic activity before, the EPA report said.

The EPA said the draft, obtained by the specialized news service EnergyWire through a Freedom of Information Act request, was a "technical report" as opposed to a policy blueprint and "is still under development."

#### SEEKING PLAINTIFFS

While the federal regulatory process plays out, the relationship between injection wells and earthquakes could first be thrashed out in court. Defense lawyers say proving negligence could be a difficult hurdle.

"You have to prove that the conduct was unreasonable," said Thomas Daily, an Arkansas lawyer who represents energy firms and is not involved in the earthquake cases. "You are not liable for a bolt out of the blue."

The plaintiffs' attorneys, from the Little Rock firm Emerson Poynter, claim the companies should have known the risks of drilling in a historically seismic area.

"The scientific proof is absolutely there," said plaintiffs' lawyer Scott Poynter.

Emerson Poynter lawyers said they currently represent 35 homeowners, about half of whom have yet to file lawsuits but plan to do so in state court. Along U.S. highway Route 65, which cuts through Greenbrier, the firm sprung for a billboard that features an illustration of a cracked brick wall next to the caption, "Earthquake damage?" written in a shaky looking font. The firm's phone number is at the top.

No matter how many people sign on, state regulators said the lawsuits will not deter oil and gas drilling.

"It's something that happened, we addressed it and developed some rules to keep it from happening again and everyone has moved on," said Lawrence Bengal, director of the Arkansas Oil and Gas Commission. "Whether the past will result in some award of money to someone I really don't know. But I don't know what more could have been done."

(Mica Rosenberg / REUTERS, August 27, 2013, [http://world.einnews.com/article/164964687/gk4noWXYUODynGnX?afid=777&utm\\_source=MailingList&utm\\_medium=email&utm\\_campaign=Breaking+News%3A+world455-Tuesday](http://world.einnews.com/article/164964687/gk4noWXYUODynGnX?afid=777&utm_source=MailingList&utm_medium=email&utm_campaign=Breaking+News%3A+world455-Tuesday))



#### Σεισμός στο Καλλίδρομο (Πεγγίни)

Ο Καθηγητής της Δυναμικής Τεκτονικής Εφαρμοσμένης Γεωλογίας & Διαχείρισης Φυσικών Καταστροφών του Εθνικού & Καποδιστριακού Πανεπιστημίου Αθηνών Δρ. Ευθύμης Λέκκας μας έστειλε την παρακάτω παρουσίαση για τον πρόσφατο σεισμό στο Καλλίδρομο.

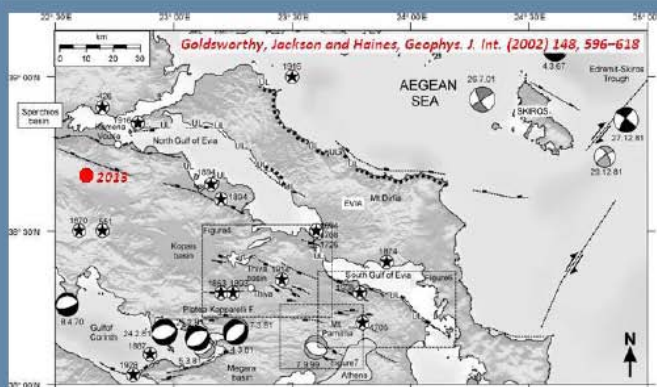




Δρ. ΑΘΑΝ. ΓΚΑΝΑΣ Δρ. ΧΑΡ. ΚΡΑΝΗΣ  
Δρ. ΕΜ. ΣΚΟΥΡΤΣΟΣ Δρ. ΕΥΘ. ΛΕΚΚΑΣ

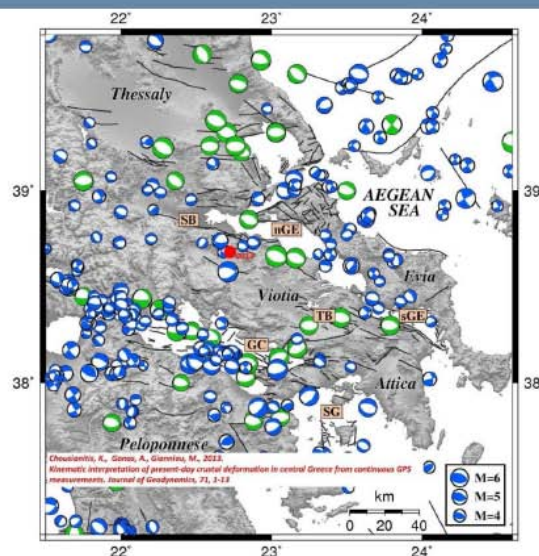
## ΣΕΙΣΜΟΣ ΚΑΛΛΙΔΡΟΜΟΥ 7 ΑΥΓ 2013

ΑΘΗΝΑ ΑΥΓΟΥΣΤΟΣ 2013

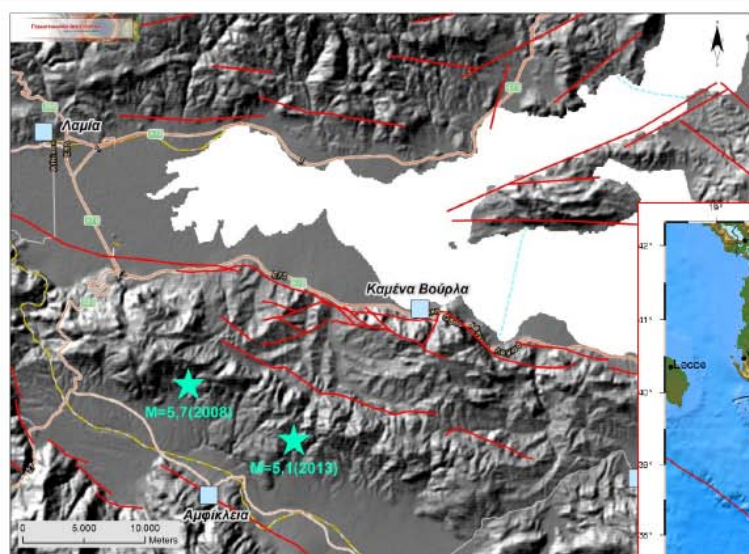


Χάρτης μεγάλων ιστορικών –  
σύγχρονων σεισμών

Χάρτης μηχανισμών γένεσης (Βάση δεδομένων: Ambraseys and Jackson (1990) Papadimitriou and Karakostas (2003), CMT Catalogue (1976–2005;  $M_w > 5$ ) and from the NOA MT (Moment Tensor) Catalogue (2006–2013))

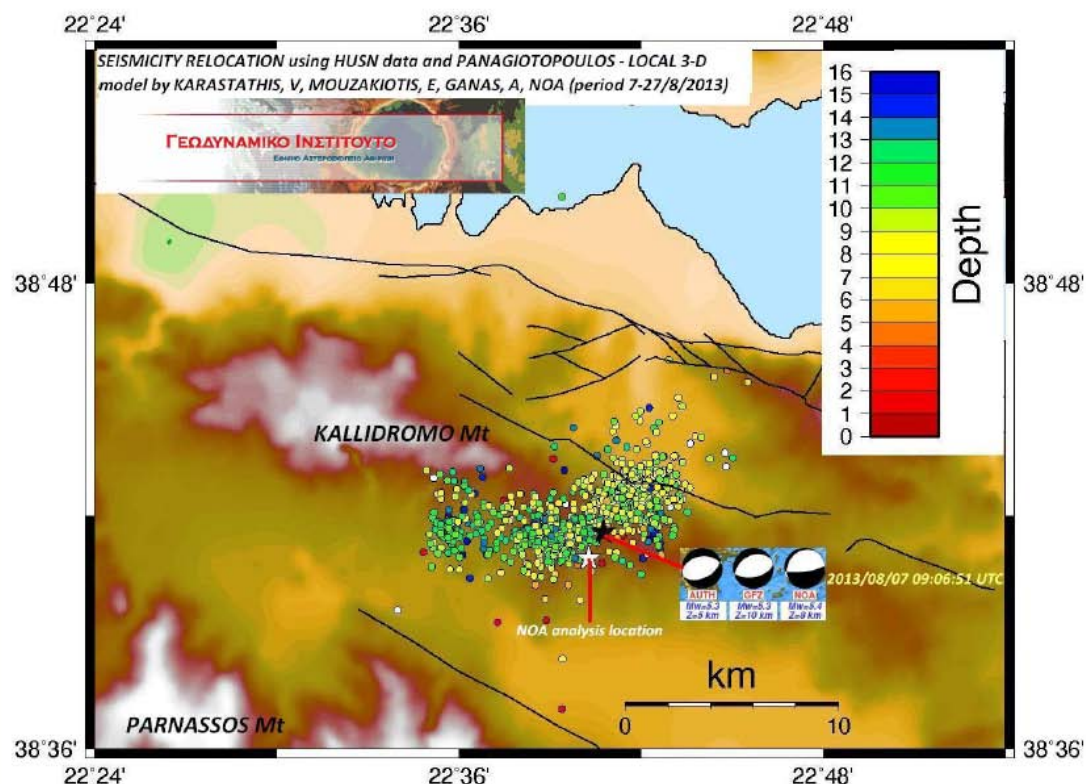
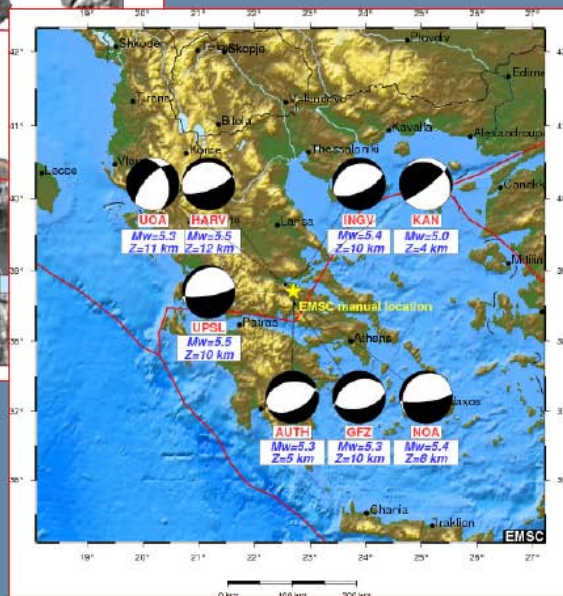






Χάρτης μεγάλων νεοτεκτονικών ρηγμάτων

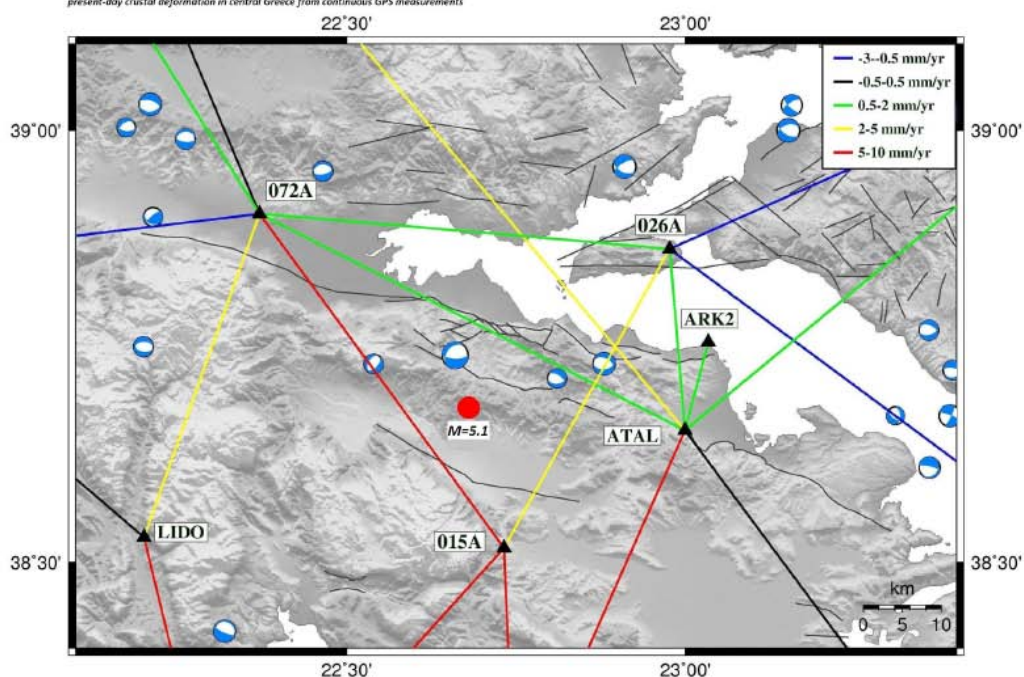
Μηχανισμοί Γένεσης 7/8/13



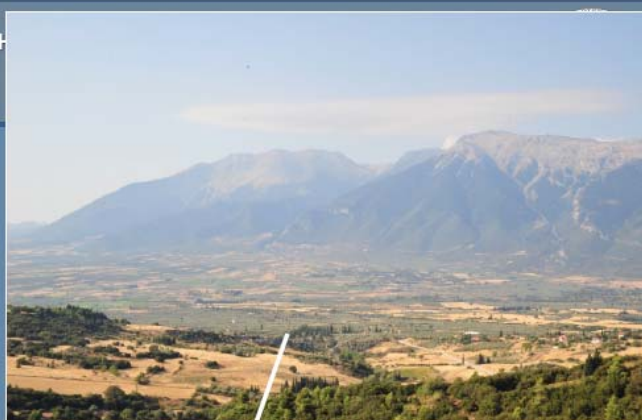


### Χάρτης μεταβολών γραμμών βάσης GPS

Chousianitis K., Ganas A., Gianniu M., *Journal of Geodynamics* 71 (2013) 1–13, Kinematic interpretation of present-day crustal deformation in central Greece from continuous GPS measurements

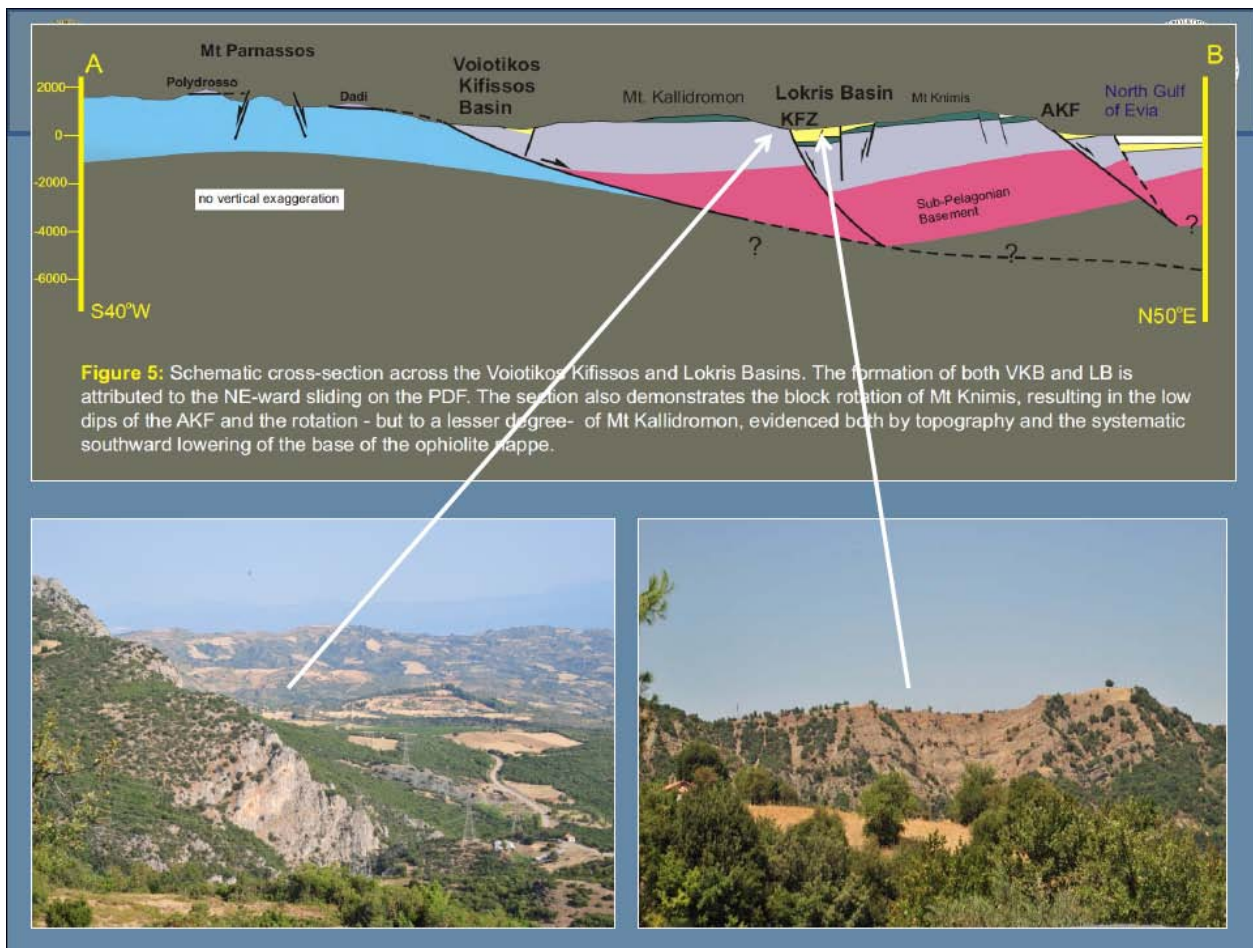


**Figure 1.** Hillshaded relief of central-eastern mainland Greece. PDF: Parnassos Detachment Fault; 1: Lichas Fault Zone; 2: Telethron FZ; 3: Kandilion FZ; 4: Kamena Vourla FZ; 5: Agios Konstantinos FZ; 6: Arkitsa FZ; 7: Longos FZ; 8: Kallidromon GZ; 9: Atalanti FZ; 10: Brallos-Giti FZ.



**Figure 2:** Neotectonic relief map of the study area. Red arrows denote the mean direction of slip vector of the examined major faults.









Απόψεις ζημιών στον Ιερό Ναό Μενδενίτσας



Απόψεις ζημιών στον Ιερό Ναό Παναγίας Ρεγγινίου



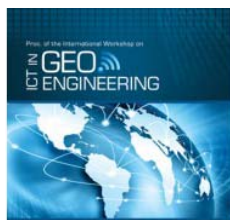


ΕΘΝΙΚΟ & ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ  
ΤΜΗΜΑ ΓΕΩΛΟΓΙΑΣ & ΓΕΩΠΕΡΙΒΑΛΛΟΝΤΟΣ

ΕΘΝΙΚΟ ΑΣΤΕΡΟΣΚΟΠΕΙΟ ΑΘΗΝΩΝ  
ΓΕΩΔΥΝΑΜΙΚΟ ΙΝΣΤΙΤΟΥΤΟ



# ΝΕΕΣ ΕΚΔΟΣΕΙΣ ΣΤΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΠΙΣΤΗΜΕΣ



## ICT in Geo-Engineering

### Proceedings of the International Workshop

**Y. Miyata, T. Okayasu, H. Furuya, T. Uchimura and J. Otani**

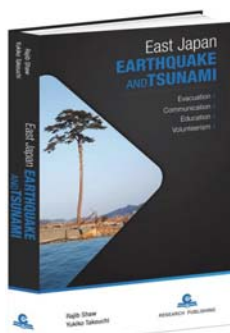
Recently, "Ubiquitous" became a common word for human life and Information and Communication Technology which is often called "ICT" is one of indispensable tools. And even in Geo-Engineering, ICT has been widely used such as measurements and quality control for design and construction. Under these circumstances, International Workshop on ICT in Geo-Engineering (ICTGE2012) is held in Kyoto, Japan on 17 and 18 May in 2012 and this workshop is organized by the Japanese Geotechnical Society. The main topics of this workshop are to exchange the ideas on current sensor and networking techniques and to summarize the right application fields of ICT in Geo-Engineering.

It is hoped that this volume will add to the dissemination in recent advances and applications of ICT in Geo-Engineering by researchers and engineers.

Themes addressed include:

Geo-Information and Sensor Techniques  
Network Communication Techniques for Geo-Engineering  
Application of ICT to Geo-Engineering

(Research Publishing / RPS, May 2012)



## East Japan Earthquake and Tsunami

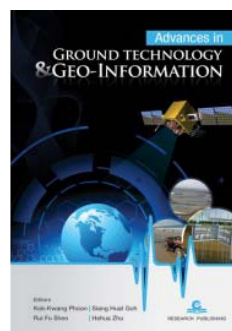
### Evacuation, Communication, Education and Volunteerism

**Rajib Shaw & Yukiko Takeuchi**  
Kyoto University, Japan

The East Japan earthquake and tsunami is the one of the most devastated disasters, Japan has experienced after the World War II. Due to its scale, diversity and nature, the recovery lessons will be quite extensive and dynamic. The earthquake has damaged significantly the educational facilities in all three hardest hit prefectures: Iwate, Miyagi and Fukushima. There are different issues related to post disaster recovery. Evacuation behavior, communication, education and volunteer roles are some of the key elements which need to be emphasized, and the lessons learned can

be utilized not only to the recovery of Tohoku region, but for other parts of Japan and the world. The book aims to draw the key lessons on the above four issues, especially from the viewpoint of community participation.

(Research Publishing / RPS, 2012)



## Advances in Ground Technology and Geo-Information

**Kok-Kwang Phoon, Siang Huat Goh, Rui Fu Shen, Hehua Zhu**

The growth of mega cities has been particularly dramatic across parts of Asia. The need for quality living space coupled with the increasing density of infrastructural development poses unprecedented challenges and opportunities for the geo-industry. Effective application of innovative ground technology including information technology is needed to:

- Propel productivity in the geo-industry;
- Respond to more complex technical challenges in the development of underground space;
- Support increasing social demand for sustainable and responsible development - green technology being one of the recent topical examples.

This book contains 58 papers from 17 countries (Australia, Austria, China, Germany, Hong Kong, India, Italy, Japan, Korea, Malaysia, Portugal, Kazakhstan, Singapore, Taiwan, Turkey, United Kingdom, and United States) including 8 keynote papers and 7 invited papers from world renowned experts. It aims to address the recent advances in ground technology and geo-information systems.

This book covers the wide range of topics include:

- Urban Geo-Informatics
- Innovative Construction Methods
- New Design Method and New Test Technology
- Numerical Methods for Geo-Engineering
- Data Acquisition and Monitoring
- Database and Data Mining
- Case Studies with Innovative Technology
- Geo-Modelling and Geo-Informatics
- Emerging Techniques in Information Technology

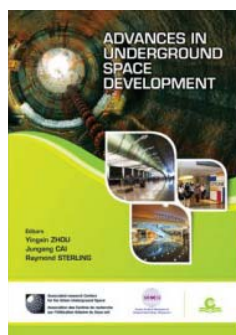
Keynotes

- Advanced Real-Time Monitoring and Health Assessment of Geotechnical Systems, *Tarek Abdoun and Victoria Bennett (USA)*
- Recent Development of Underground Engineering in Shanghai, *Yun Bai, Guanshui Liu and Yanlong Zheng (China)*
- Application of Data Mining in Transportation Geotechnics, *António Gomes Correia, Paulo Cortez and Joaquim Tinoco (Portugal)*
- New Technologies for Shallow to Deep Underground Construction in Urban Area, *Tadashi Hashimoto (Japan)*
- Recent Development of Jacked Piling in Hong Kong, *Victor Li (Hong Kong)*



- Development of Geoinformatic Databases and their Application to Geotechnical Problems, *Mamoru Mimura and Koji Yamamoto (Japan)*
- Innovative Approaches to Land Reclamation in Singapore, *Thiam-Soon Tan, Yi-Tan Lu, Kok-Kwang Phoon and Muthusamy Karthikeyan (Singapore)*
- Bringing Information Technology into Geotechnical Engineering Practice – Concept and Development, *Chungsik Yoo (Korea)*

(Research Publishing / RPS, 2012)



### **Advances in Underground Space Development**

**Yingxin Zhou, Jungang Cai and Raymond Sterling**

Worldwide, the use of underground space has been increasingly recognized as part of the solution to creating sustainable urban development, and in many countries has been elevated to a strategic level for long-term economic development. Underground space offers many possibilities for simultaneously improving urban infrastructure and urban livability. At the same time, the creation of underground space faces many special challenges – both from a human design perspective and in terms of technical and cost challenges. Equally important is the need to move from the creation of underground facilities as a haphazard, first-come first-served network of structures to a well-planned use of underground space that can serve the needs of urban areas for future generations as well as our own.

This book contains over 160 peer-review papers and covers a very diverse and wide-ranging spectrum of topics dealing with underground space use and development. They are grouped according to the following topic areas: planning and design, architecture, fire and life safety, underground Infrastructure and applications, sustainability and resilience, geo-engineering and rock mechanics, tunneling and excavation, and underground engineering. It will serve as a useful reference for planners, engineers, researchers, and policy makers involved in the planning, creation, and use of underground space.

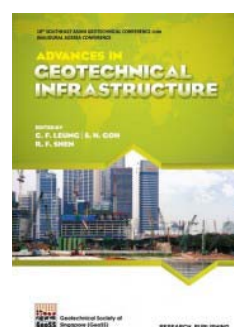
(Research Publishing / RPS, 2012)

Ground improvement has been both a science and art, with significant advancements observed since ancient history, with lessons learnt from trial and error applications apart from the knowhow gained through cutting-edge research and development.

These Proceedings highlighted by numerous Keynote papers, Heritage lectures, State-of-the-Art reports, invited special guest lectures and theme papers together with a wide array of other written contributions from all continents elucidate a comprehensive coverage of the current State-of-the-Art in Ground Improvement from theory to practice.

Over 200 articles have been included in the Proceedings from more than 30 countries bringing together in two volumes the knowledge and experience of world-renowned international researchers, consultants and practitioners and the evolving talents of early career professionals and research students.

(Research Publishing / RPS, 2012)



### **Advances in Geotechnical Infrastructure**

**C. F. Leung, S. H. Goh and R. F. Shen**

This edited book contains 155 technical papers with contributors from all over the world, a good number of whom hail from outside Southeast Asia. There are papers covering complex foundation issues such as the effects of tunnel excavation or deep basement excavation on adjacent piled foundations supporting existing buildings. It is also heartening to see the emergence of new topics. The conference has one session on geotechnical reliability, which is a relatively new field hosted by TC304 Engineering Practice of Risk Assessment and Management. There is also a session on transportation geotechnics hosted by TC202. Last but not least, the Society for Rock Mechanics and Engineering Geology Singapore has co-organized a session on rock mechanics and geology. This is an important topic in many countries, including Singapore, which is presently exploring the use of underground space for various purposes.

(Research Publishing / RPS, 2013)



### **Ground Improvement and Ground Control: Transport Infrastructure Development And Natural Hazards Mitigation (Volume I & II)**

**Proceedings of the International Conference**

**Buddhima Indraratna, Cholachat Rujikiatkamjorn & Jayan Vinod**



[http://www.issmge.org/attachments/article/617/ISSMGE\\_Bulletin\\_Vol7\\_No4a\\_July\\_2013\(part\\_1\).pdf](http://www.issmge.org/attachments/article/617/ISSMGE_Bulletin_Vol7_No4a_July_2013(part_1).pdf)

[http://www.issmge.org/attachments/article/617/ISSMGE\\_Bulletin\\_Vol7\\_No4b\\_July\\_2013\(part\\_2\).pdf](http://www.issmge.org/attachments/article/617/ISSMGE_Bulletin_Vol7_No4b_July_2013(part_2).pdf)

Κυκλοφόρησε το Τεύχος 4 του 7<sup>ου</sup> Τόμου του ISSMGE Bulletin (Αυγούστου 2013) με τα παρακάτω περιεχόμενα:

- Message from TC212, Prof. Dr.-Ing. Rolf Katzenbach
- President's Reports, J.-L. Briaud, ISSMGE President
- Introduction of Important Candidates, Prof Ikuo Towhata
- Introduction of Prof Gabriel Auvinet
- Introduction Prof. Roger Frank
- Introduction of Prof. Askar Zhussupbekov
- Introduction of Conference Candidates
- Seoul - Korean Geotechnical Society
- Shanghai - Chinese Institute of Soil Mechanics and Geotechnical Engineering
- Sydney - Australian Geomechanics Society
- News on Recent Conferences
  - The International Seminar on Construction on Weak Rocks
  - 2nd International Symposium on Geotechnical Engineering for the Preservation of Monuments and Historic Sites - Napoli, Italy
  - TC 215 CPEG 2013 - Coupled Phenomena in Environmental Geotechnics
  - IGS INCHEON 2013 "International Geotechnical Symposium on Geotechnical Engineering for Disaster Prevention & Reduction, Environmentally Sustainable Development"
  - The 1st Taiwan-Kazakhstan Joint Workshop on Geotechnical Engineering
  - PILE-2013 International Conference on State of the Art of Pile Foundation and Pile Case Histories
  - Meeting of Kazakhstan and Ukrainian Societies in Kiev
- Reminiscence: Prof. Finn
- Obituary: Professor Nilmar Janbu (1921 - 2013)
- Event Diary
- Corporate Associates
- Foundation Donors
- ISSMGE's International Journal of Geoengineering Case Histories



Κυκλοφόρησε το εορταστικό Τεύχος #103 του **Newsletter του Geoengineer.org** (Αύγουστος 2013) με πολλές χρήσιμες πληροφορίες για όλα τα θέματα της γεωτεχνικής μηχανικής. Υπενθυμίζεται ότι το Newsletter εκδίδεται από τον συνάδελφο και μέλος της ΕΕΕΕΓΜ Δημήτρη Ζέκκο ([secretariat@geoengineer.org](mailto:secretariat@geoengineer.org)).



## International Journal of Geoengineering Case Histories

Κυκλοφόρησε το Τεύχος 4 του Τόμου 2 του ISSMGE's International Journal of Geoengineering Case Histories με τα παρακάτω περιεχόμενα:

Christopher T. Senseney "Expedient Mitigation of Collapsible Loess in Northern Afghanistan", pp. 252-257

<http://casehistories.geoengineer.org/volume/volume2/issue4/issue4.html>

Κυκλοφόρησε το Τεύχος 1 του Τόμου 3 του ISSMGE's International Journal of Geoengineering Case Histories (<http://casehistories.geoengineer.org/volume/volume3/issue1/issue1.html>) με τα παρακάτω περιεχόμενα:

Deepankar Choudhury, Rolf Katzenbach "Editorial", pp. i-ii

Alvin K.M. Lam, Daman D.M. Lee "Combined Pile Foundation System for a Residential Complex", pp. 1-9

Biswas, S., Choudhary, S.S., Manna, B., and Baidya, D.K. "Field Test on Group Piles under Machine Induced Coupled Vibration", pp. 10-23

Bhattacharya, S., and Tokimatsu, K. "Collapse of Showa Bridge Revisited", pp. 24-35

Phan, T.L., Matsumoto, T., and Nguyen, H.H. "Comparison of Static and Dynamic Pile Load Tests at Thi Vai International Port in Viet Nam", pp. 36-66





<http://library.constantcontact.com/download/get/file/1111082143825-81/2013-07-igs-news.pdf>

Κυκλοφόρησε το Τεύχος 2, Volume 29 των **IGS News**. Μεταξύ των θεμάτων περιλαμβάνονται:

- President's Corner: Anatomy of the 10ICG (Berlin 2014)
- General Information for IGS Members
- Announcements of Conferences of IGS
- Announcements of Conferences under the Auspices of IGS
- News from the IGS Chapters and the Membership
- List of IGS Chapters
- Official Journals of the IGS
- Corporate Membership
- IGS News Publisher, Editor and Chapter Correspondents
- IGS Council
- IGS Officers
- IGS Membership Application
- Calendar of Events



## ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ ΕΕΕΕΓΜ (2012 – 2015)

Πρόεδρος :	Χρήστος ΤΣΑΤΣΑΝΙΦΟΣ, Δρ. Πολιτικός Μηχανικός, ΠΑΝΓΑΙΑ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Ε.Π.Ε. <a href="mailto:president@hssmge.gr">president@hssmge.gr</a> , <a href="mailto:editor@hssmge.gr">editor@hssmge.gr</a> , <a href="mailto:ctsatsanifos@pangaea.gr">ctsatsanifos@pangaea.gr</a>
Α' Αντιπρόεδρος :	Παναγιώτης ΒΕΤΤΑΣ, Πολιτικός Μηχανικός, ΟΜΙΛΟΣ ΤΕΧΝΙΚΩΝ ΜΕΛΕΤΩΝ Α.Ε. <a href="mailto:otmate@otenet.gr">otmate@otenet.gr</a>
Β' Αντιπρόεδρος :	Μιχάλης ΠΑΧΑΚΗΣ, Πολιτικός Μηχανικός <a href="mailto:mpax46@otenet.gr">mpax46@otenet.gr</a>
Γενικός Γραμματέας :	Μαρίνα ΠΑΝΤΑΖΙΔΟΥ, Δρ. Πολιτικός Μηχανικός, Αναπληρώτρια Καθηγήτρια Ε.Μ.Π. <a href="mailto:secretary@hssmge.gr">secretary@hssmge.gr</a> , <a href="mailto:mpanta@central.ntua.gr">mpanta@central.ntua.gr</a>
Ταμίας :	Μανώλης ΒΟΥΖΑΡΑΣ, Πολιτικός Μηχανικός <a href="mailto:e.vouzaras@gmail.com">e.vouzaras@gmail.com</a>
Αναπληρωτής Ταμία :	Γιώργος ΝΤΟΥΛΗΣ, Πολιτικός Μηχανικός, ΕΔΑΦΟΜΗΧΑΝΙΚΗ Α.Ε. ΓΕΩΤΕΧΝΙΚΕΣ ΜΕΛΕΤΕΣ Α.Ε. <a href="mailto:gdoulis@edafomichaniki.gr">gdoulis@edafomichaniki.gr</a>
Έφορος :	Γιώργος ΜΠΕΛΟΚΑΣ, Δρ. Πολιτικός Μηχανικός, Κέντρο Δομικών Ερευνών και Προτύπων ΔΕΗ <a href="mailto:gbelokas@gmail.com">gbelokas@gmail.com</a> , <a href="mailto:gbelokas@central.ntua.gr">gbelokas@central.ntua.gr</a>
Μέλη :	Ανδρέας ΑΝΑΓΝΩΣΤΟΠΟΥΛΟΣ, Δρ. Πολιτικός Μηχανικός, Ομότιμος Καθηγητής ΕΜΠ <a href="mailto:aanagn@central.ntua.gr">aanagn@central.ntua.gr</a> Μιχάλης ΚΑΒΒΑΔΑΣ, Δρ. Πολιτικός Μηχανικός, Αναπληρωτής Καθηγητής ΕΜΠ <a href="mailto:kavvadas@central.ntua.gr">kavvadas@central.ntua.gr</a>
Αναπληρωματικά Μέλη :	Χρήστος ΑΝΑΓΝΩΣΤΟΠΟΥΛΟΣ, Δρ. Πολιτικός Μηχανικός, Καθηγητής Πολυτεχνικής Σχολής ΑΠΘ <a href="mailto:anag@civil.auth.gr">anag@civil.auth.gr</a> , <a href="mailto:canagnostopoulos778@gmail.com">canagnostopoulos778@gmail.com</a> Σπύρος ΚΑΒΟΥΝΙΔΗΣ, Δρ. Πολιτικός Μηχανικός, ΕΔΑΦΟΣ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Α.Ε. <a href="mailto:scavounidis@edafos.gr">scavounidis@edafos.gr</a> Δημήτρης ΚΟΥΜΟΥΛΟΣ, Δρ. Πολιτικός Μηχανικός, ΚΑΣΤΩΡ Ε.Π.Ε. <a href="mailto:coumoulos@castorltd.gr">coumoulos@castorltd.gr</a> Μιχάλης ΜΠΑΡΔΑΝΗΣ, Πολιτικός Μηχανικός, ΕΔΑΦΟΣ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Α.Ε. <a href="mailto:mbardanis@edafos.gr">mbardanis@edafos.gr</a> , <a href="mailto:lab@edafos.gr">lab@edafos.gr</a>

### ΕΕΕΕΓΜ

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

Τηλ. 210.7723434  
Τοτ. 210.7723428  
Ηλ-Δι. [secretariat@hssmge.gr](mailto:secretariat@hssmge.gr) ,  
[geotech@central.ntua.gr](mailto:geotech@central.ntua.gr)  
Ιστοσελίδα [www.hssmge.org](http://www.hssmge.org) (υπό κατασκευή)

«ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ» Εκδότης: Χρήστος Τσατσανίφος, τηλ. 210.6929484, τοτ. 210.6928137, ηλ-δι. [pangaea@otenet.gr](mailto:pangaea@otenet.gr), [ctsatsanifos@pangaea.gr](mailto:ctsatsanifos@pangaea.gr), [editor@hssmge.gr](mailto:editor@hssmge.gr)

«ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ» «αναρτώνται» και στην ιστοσελίδα [www.hssmge.gr](http://www.hssmge.gr)