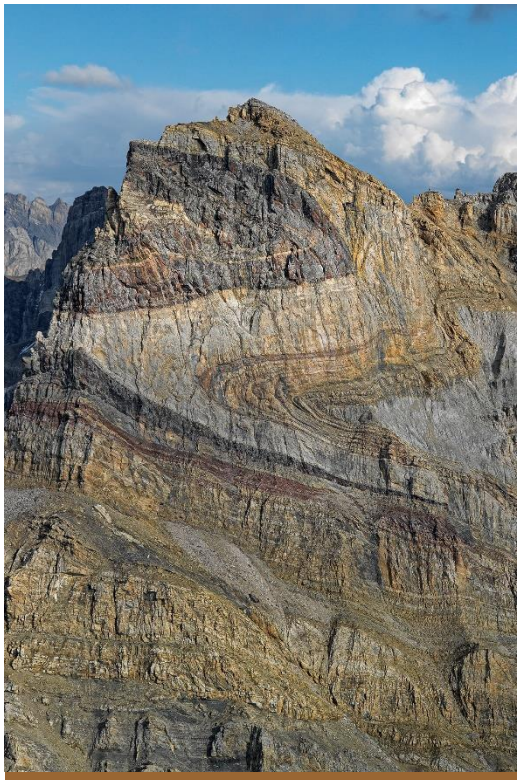


Dent de Morcles, Swiss Alps

Αρ. 177 – ΙΟΥΛΙΟΣ 2023

ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

Τα Νέα της Ε Ε Ε Ε Γ Μ

177

Όρος Ferdenrothorn στις Άλπεις της Βέρνης, μεταξύ Leukerbad και Ferden στο καντόνι του Valais

(οι φωτογραφίες δημοσιεύονται με την ευγενικά άδεια του φωτογράφου - kind permission of the photographer Bernhard Edmaier, Geologist)

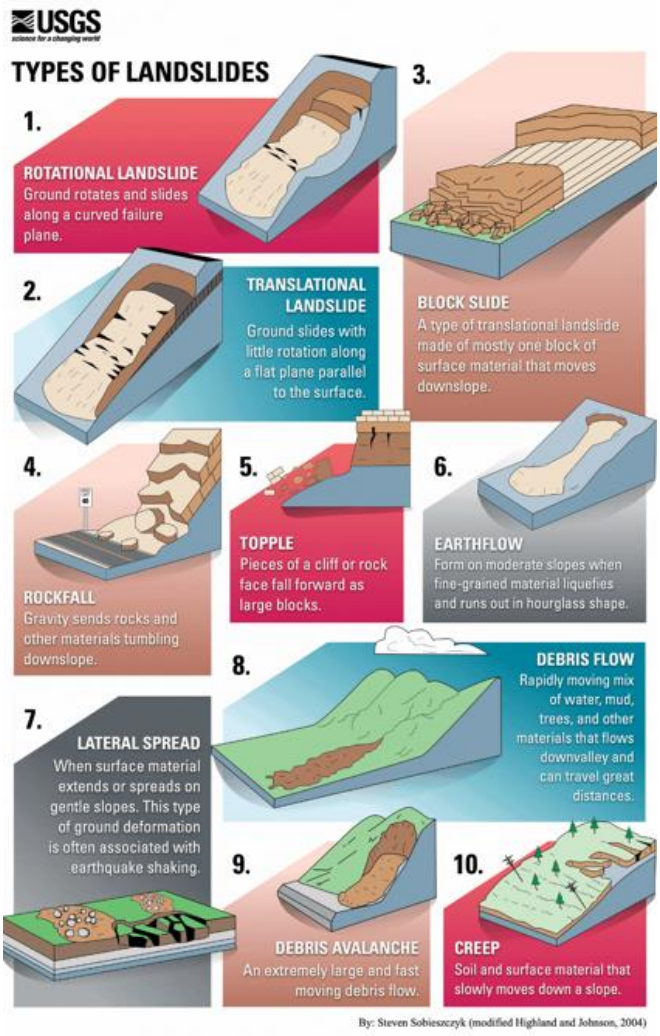
ISSN: 2732-7248

Π Ε Ρ Ι Ε Χ Ο Μ Ε Ν Α

ΑΡΘΡΑ

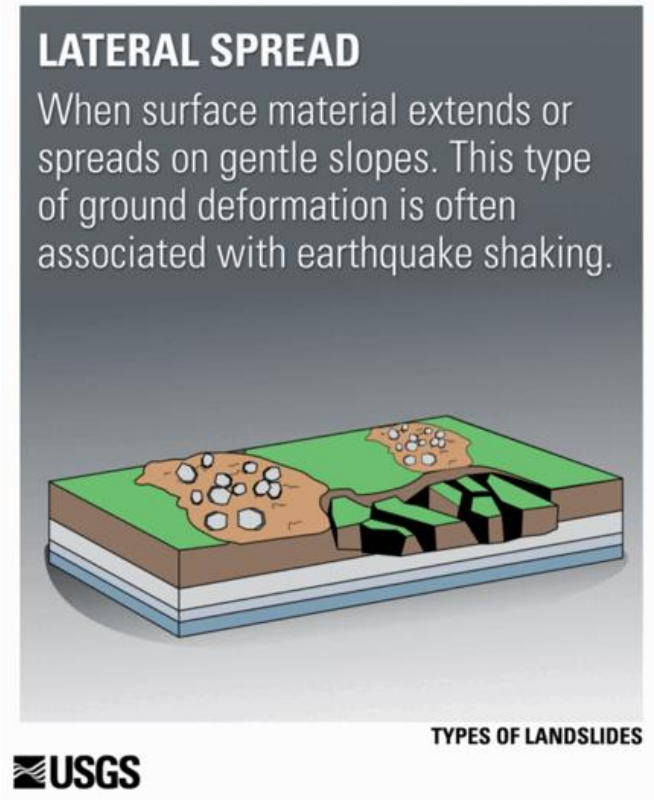
Types of Landslides (animations)

The term "landslide" describes a wide variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these. The materials may move by falling, toppling, sliding, spreading, or flowing. The animated GIF shows a graphic illustration of different types of landslides, with the commonly accepted terminology describing their features. The various types of landslides can be differentiated by the kinds of material involved and the mode of movement.

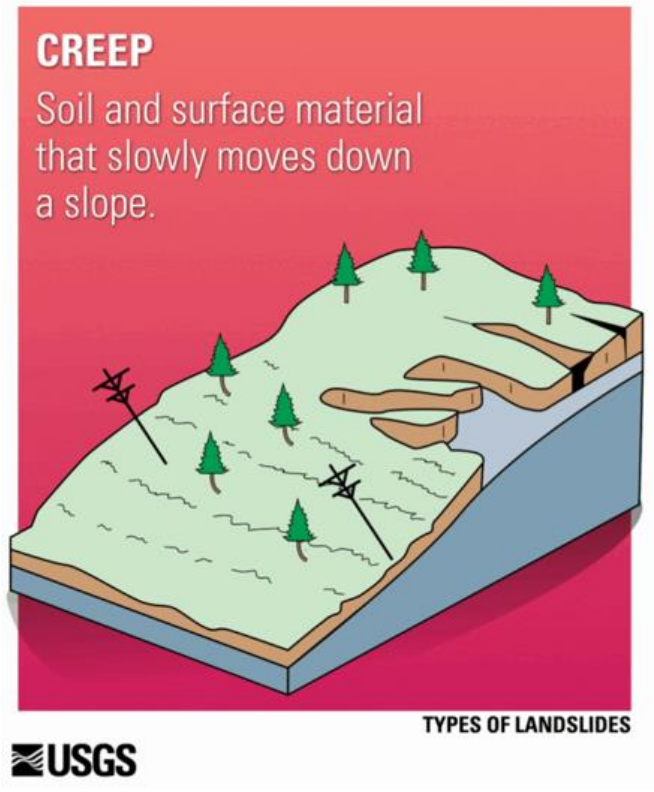


Original

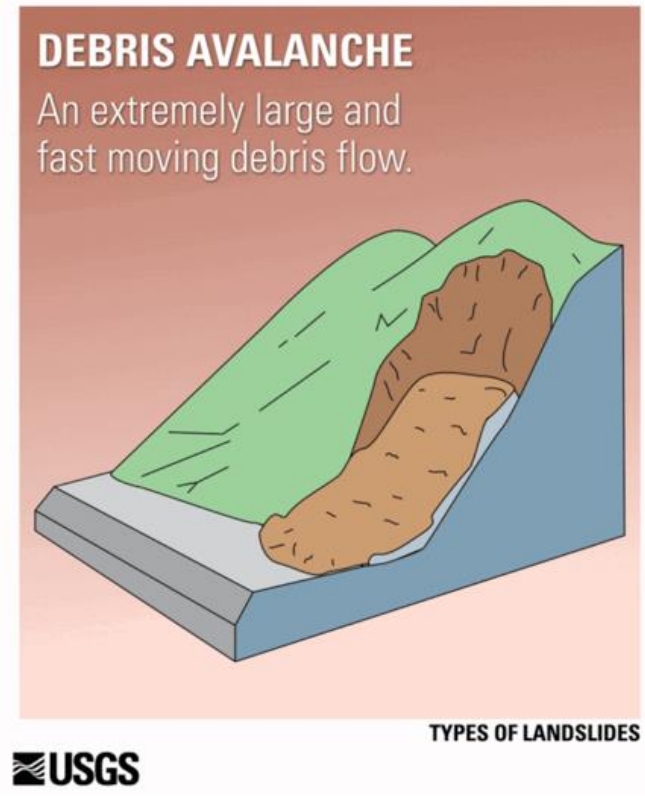
(σ.ε. Πολύ επιμορφωτικό δημοσίευμα της United States Geological Survey για τα είδη των κατολισθητικών φαινομένων. Πιέζοντας τον σύνδεσμο είτε στην συνολική διαφάνεια, είτε σε κάθε επί μέρους διαφάνεια, παρουσιάζεται κινούμενο ή κινούμενα σχέδια και αναλυτική περιγραφή για το κάθε είδος κατολισθητικού φαινομένου).



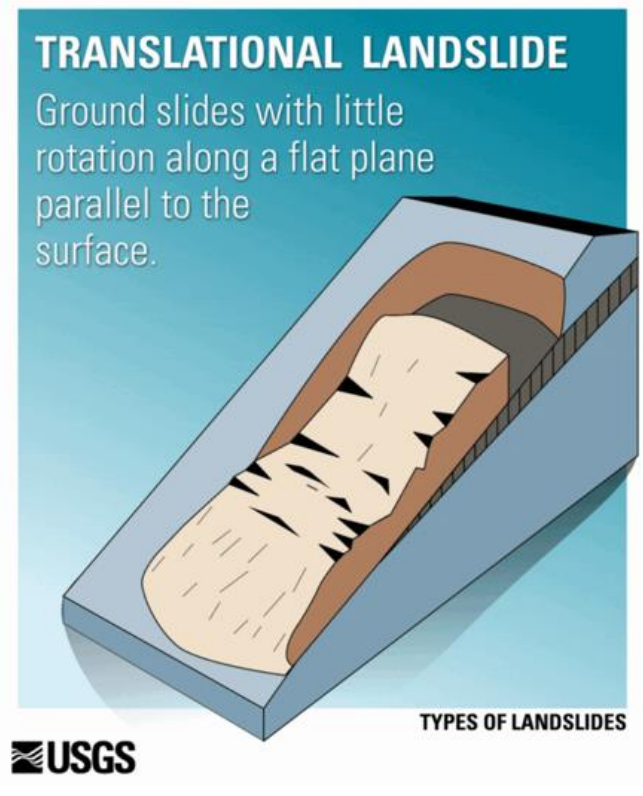
link



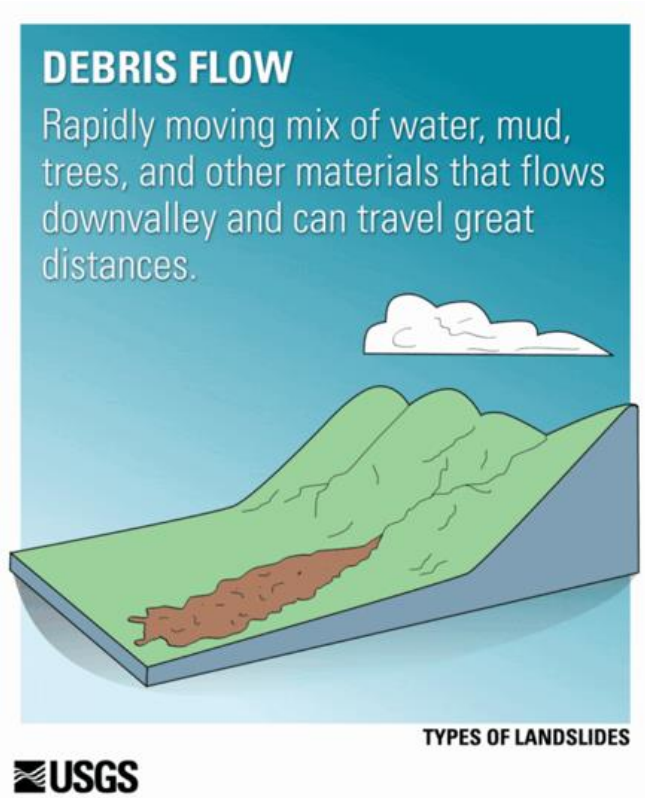
link



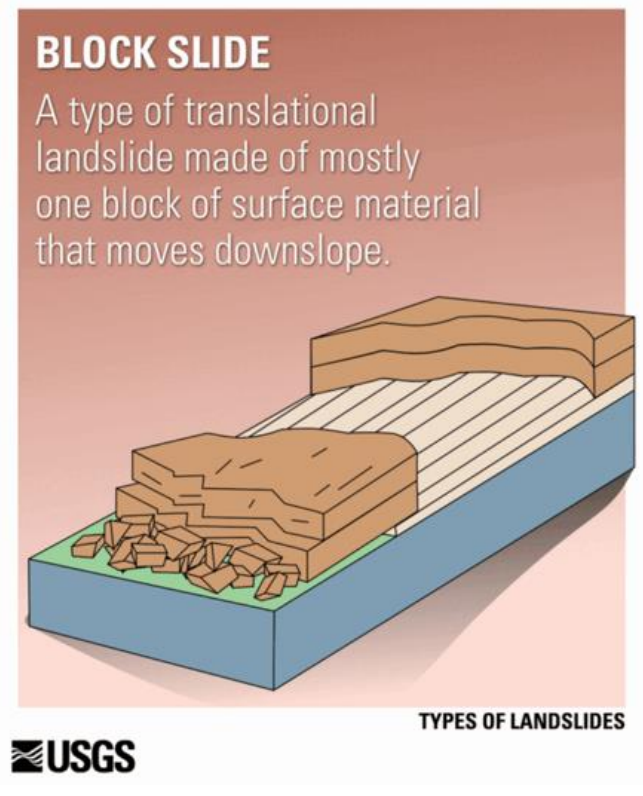
link



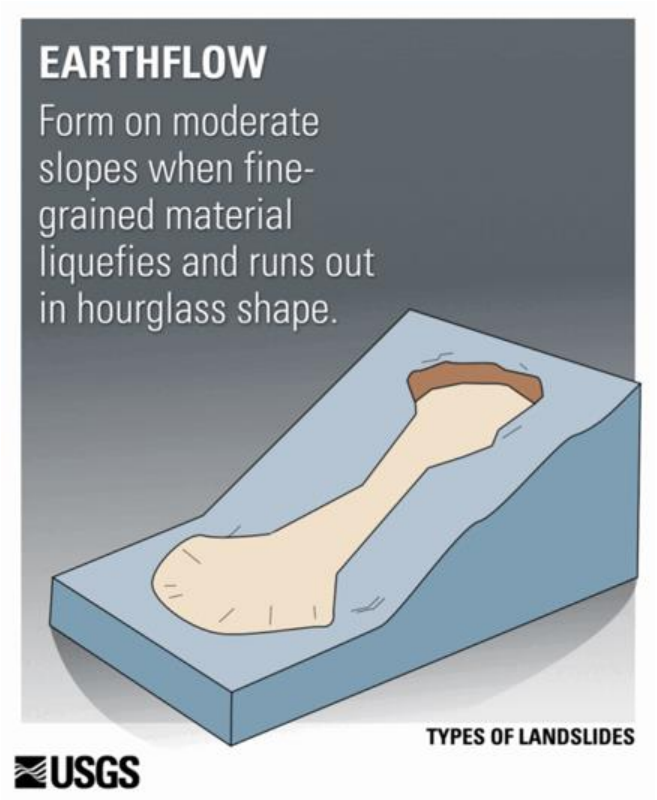
link



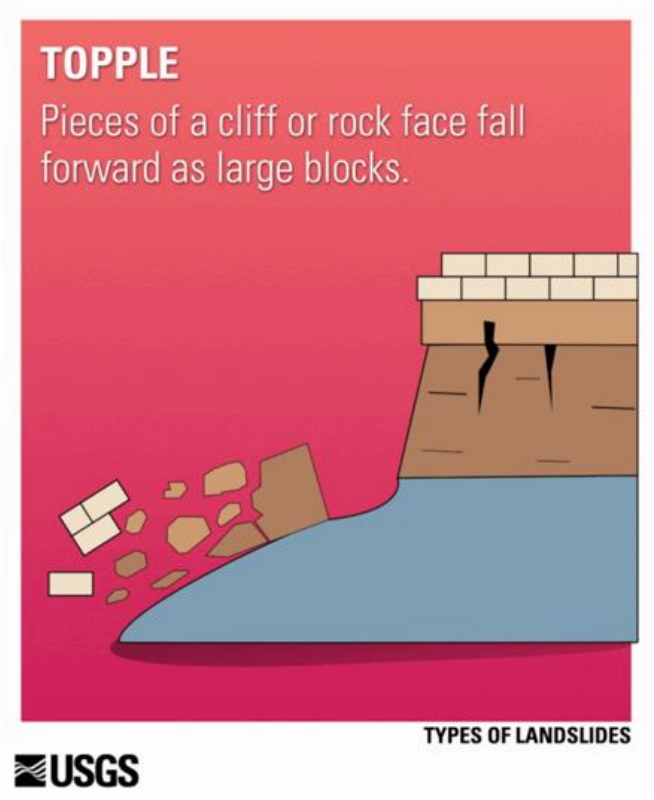
link



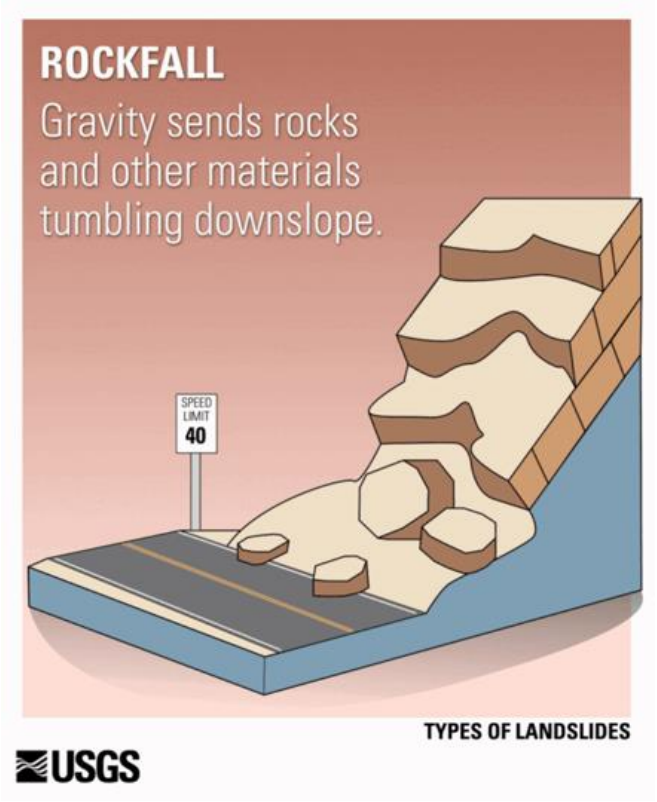
link



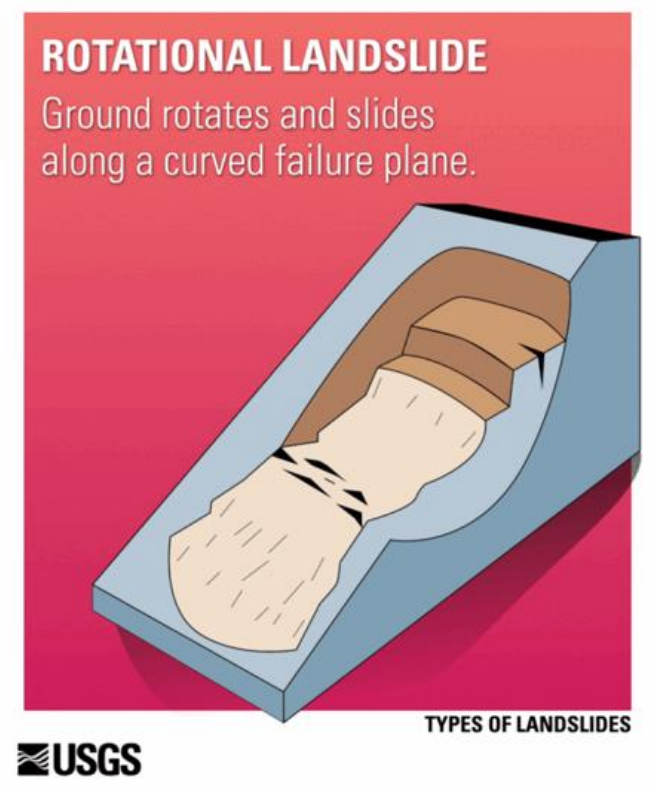
link



link



link



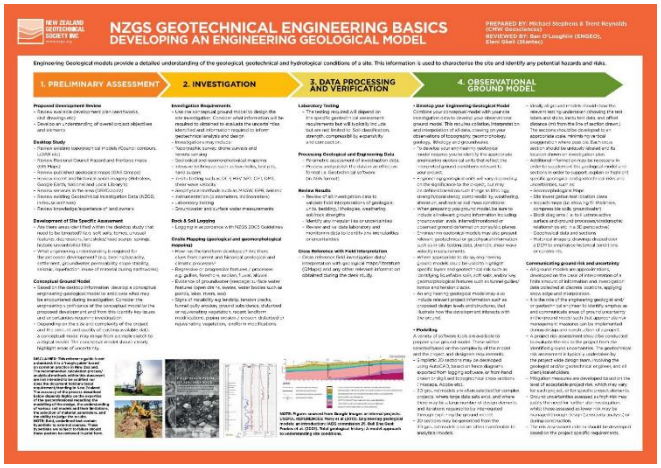
link

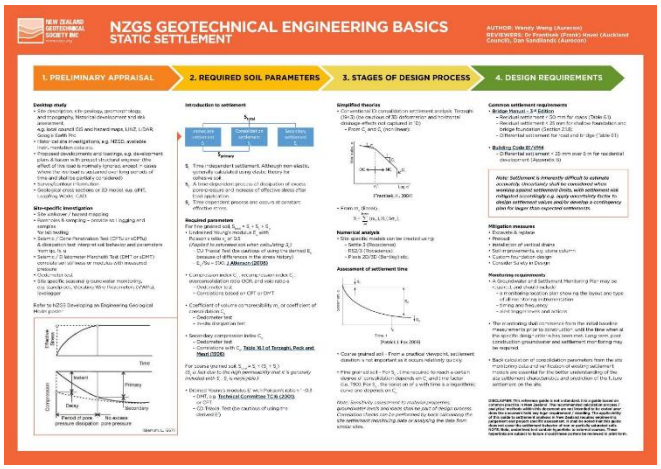
(USGS / Communications and Publishing, July 20, 2023, https://www.usgs.gov/media/images/types-landslides)

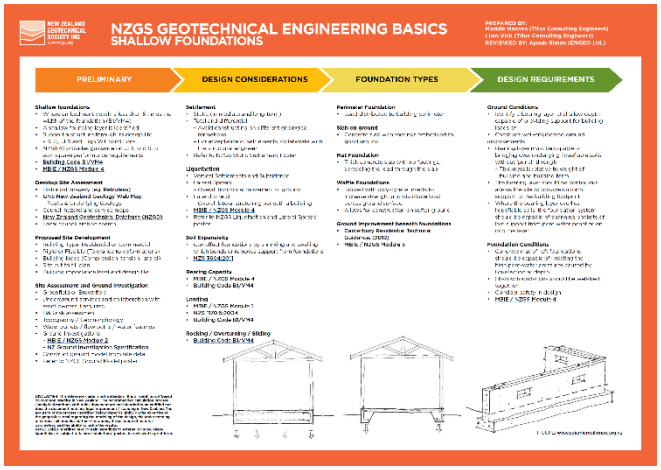
New Zealand Geotechnical Society

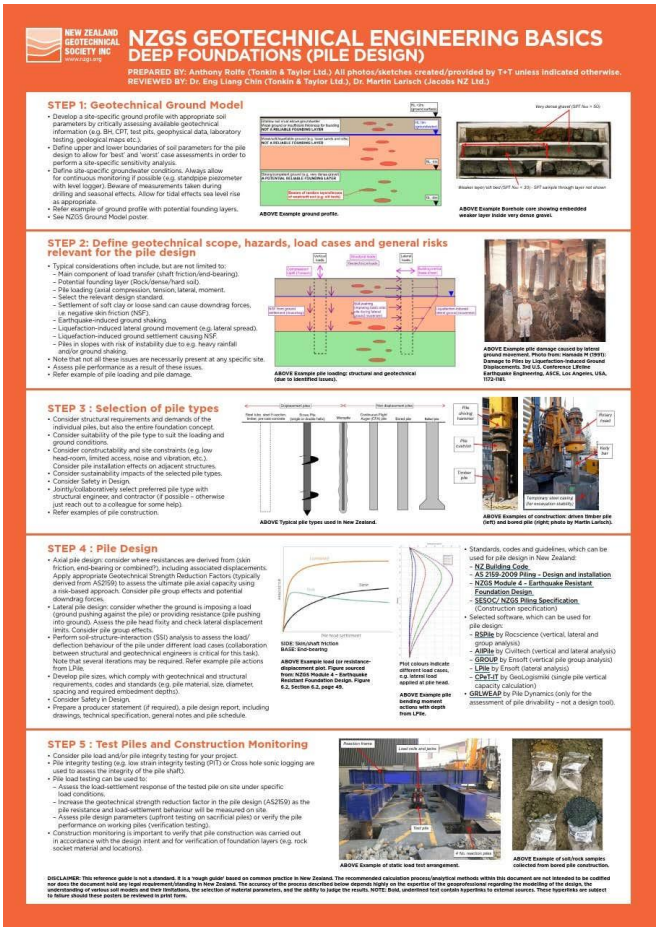
Geotechnical Engineering Basics Posters

The Young Geotechnical Professional (YGP) group are in the process of developing Geotechnical Engineering – Basics posters which are created by YGPs for YGPs. The idea behind these posters is to 'bridge the gap' between university assessment style theory and operating in industry general practice. Each poster has a theme and are expected to reference each other within its final iteration. The posters are intended to be simple, follow a logical process, and capture 80% of our day-to-day processes as geo-professionals









https://www.nzgs.org/geotechnical-engineering-basics-posters/

The silent impact of underground climate change on civil infrastructure

Alessandro F. Rotta Loria

Abstract

Urban areas increasingly suffer from subsurface heat islands: an underground climate change responsible for environmental, public health, and transportation issues. Soils, rocks, and construction materials deform under the influence of temperature variations and excessive deformations can affect the performance of civil infrastructure. Here I explore if ground deformations caused by subsurface heat islands might affect civil infrastructure. The Chicago Loop district is used as a case study. A 3-D computer model informed by data collected via a network of temperature sensors is used to characterize the ground temperature variations, deformations, and displacements caused by underground climate change. These deformations and displacements are significant and, on a case-by-case basis, may be incompatible with the operational requirements of civil structures. Therefore, the impact of underground climate change on civil infrastructure should be considered in future urban planning strategies to avoid possible structural damage and malfunction. Overall, this work suggests that underground climate change can represent a silent hazard for civil infrastructure in the Chicago Loop and other urban areas worldwide, but also an opportunity to reutilize or minimize waste heat in the ground.

Introduction

The ground beneath urban areas is warming up, leading to subsurface urban heat islands[1]. This underground climate change has two types of causes: anthropogenic and meteorological. The leading cause, developing over timescales of years, consists of thermal perturbations of the underground due to anthropogenic activity. Buildings and infrastructures continuously inject heat into the ground due to thermal losses associated with indoor heating and operating appliances[2,3,4,5,6,7,8,9,10]. Underground transport repeatedly impacts the temperature field of the subsurface with heat emitted by trains braking, or cars and people traveling[11,12,13,14]. Underground pipelines, sewers, high-voltage cables, and district heating systems also heat the ground[15]. Another cause of subsurface heat islands, developing over timescales of centuries, consists of meteorological influences. Rises in air temperature above the ground due to the daily absorption from construction materials of solar radiation and other heat sources are leading to meteorological urban heat islands[16,17]. As the ground temperature (e.g., beyond the shallowest 4–6 m down to 50–100 m) is typically close to the mean annual surface air temperature, and the air temperature is increasing due to urban heat islands, the ground is also warming up. Therefore, subsurface urban heat islands can partly be considered as the underground thermal imprint of meteorological urban heat islands[18].

Proportional to urban density and population[6,19], and dependent on topography and hydrogeology of the urban space[20], subsurface urban heat islands are an alarming phenomenon for urban areas, which can often be more intense than their surface counterpart[21]. A recent review of the literature suggests that subsurface heat islands are causing in various cities across the world an increase in average ground temperature between 0.1 and 2.5 °C per decade down to 100 m of depth[22]. Studies highlight multiple impacts of subsurface temperature rises on urban areas. Subsurface temperature rises can affect the biochemical state[8,23,24,25,26] and hydrogeological state[3,6,9,10,21,27,28,29] of the urban underground, leading to shifts in plant growth and thermal pollution of groundwaters, among other issues. Subsurface temperature rises can also cause transportation infrastructure and public health issues, such as overheated subway rails that force trains to slow down or stop to avoid incidents with significant economic costs associated with the delay of public transportation services, and extreme air temperatures underground that cause thermal discomfort and heat-induced diseases, such as heat cramp, dehydration, hypertension, asthma, and heatstroke[13,30,31,32,33,34,35,36,37]. On the contrary, subsurface temperature rises represent an opportunity, as geothermal technologies can harness and reutilize additional heat from the ground[38,39,40,41,42,43,44].

The fundamental hypothesis behind this work is that subsurface heat islands represent a silent hazard for urban areas, with detrimental possibilities for the performance of civil infrastructure. This hypothesis relies on three considerations: (1) soils, rocks, and construction materials are affected by temperature variations, undergoing thermally induced deformations and property changes that can be reversible or irreversible over time[45,46]; (2) the average temperature of the shallow subsurface in urban areas is rising at an alarming rate, with recorded ground temperature anomalies in the core of dense city districts that can achieve up to +20 °C[6,9,15,22]; (3) comparable temperature variations to those that are currently measured in the subsurface of urban areas have shown to represent an issue for the geotechnical and structural performance of geothermal structures and infrastructures, and for this reason, must now be considered in their design[47,48]; however, no existing civil structure or infrastructure in cities has been designed to account for rising ground temperatures and is hence prone to operational issues due to subsurface heat islands.

Motivated by the lack of a fundamental understanding of the impacts of subsurface heat islands on the performance of civil infrastructure, this study addresses such knowledge gap and validates its underlying hypothesis with reference to a real case study: the Chicago Loop district—the most densely populated district in the US after Manhattan, which suffers from an urban heat island[22]. Two facilities are used to explore this complex problem: a 3-D computer model of the Chicago Loop and a wireless temperature sensing network installed in surface and subsurface environments across such district.

The developed computer model reproduces the urban morphology of the Loop with due account of the building basements, underground parking garages, subway tunnels, train stations, and freight tunnels that characterize such a district. Based on a substantial amount of temperature data gathered from underground built environments and the ground surface, the model allows for the simulation of the waste heat continuously injected into the ground (see "Methods, Temperature sensing network"). The employed simulation approach consists of 3-D, time-dependent, thermo-hydro-mechanical finite element modeling, which not only allows to quantify the temperature variations that characterize the subsurface of the Loop in space and time but also their effects on its deformation and the groundwater flow (see "Methods, Numerical model and simulation").

Simulations are performed over 100 years: from 1951, when the subway tunnels in the Loop were completed and the morphology of its underground built environments approached the current state, till 2051. The simulation results provide ground temperature values that match with recent data collected from the heart of the Loop's subsurface (see "Methods, Numerical model validation"). On the one hand, this evidence allows retrieving the evolution of the temperature field across the Loop from the 1950s to date. On the other hand, this result allows for the prediction of temperature rises that are likely to develop over the next thirty years in the subsurface of the Loop. Jointly, the results provide a quantification of the thermally induced ground deformations and displacements

resulting from subsurface urban heat islands considering the Loop.

Based on the results of this study, the impacts of temperature variations associated with subsurface heat islands are shown to represent a silent hazard for the operational performance of civil infrastructure in Chicago and potentially other cities worldwide. Considering this issue, the need to revise current urban planning strategies to mitigate subsurface urban heat islands is finally discussed for Chicago and other cities considering two strategies detailed in this work.

…

Conclusions

This paper reveals a silent yet potentially problematic impact of subsurface urban heat islands on the performance of civil structures and infrastructures (e.g., building foundations, earth-retaining structures, and other underground structures and facilities). The root of this issue lies in thermally induced ground deformations and displacements, which develop slowly but continuously in the urban underground.

The ground deformations and displacements caused by subsurface heat islands can become an issue for the operational performance of structures and infrastructures with time, thus affecting their normal use and functionality. In other words, the development of such ground deformations and displacements does not threaten to lead to the collapse or rupture of structures and infrastructures but can potentially affect their durability, esthetic, and operational requirements. Therefore, the impacts of underground climate change on civil infrastructure do not threaten the safety of people, but they can potentially, and on a case-by-case basis, affect the efficient use and durability of such constructions, and consequently the comfort of people thriving therein.

The spatial and temporal evolution of subsurface heat islands is characterized by an inherent complexity, which depends on the evolutionary features of cities (urban morphology, urban infrastructure use, development, etc.). Despite such complexity, the results of this work support that the impacts of subsurface heat islands can be predicted realistically, promising to inform future urban planning strategies that can hamper these pervasive phenomena with effective and relatively simple strategies discussed in this study. From this perspective, subsurface heat islands can be considered a resource because they provide the opportunity to harness large quantities of waste heat that would otherwise be dispersed in the ground or, alternatively and in the first place, to minimize the loss of such heat via adequate retrofit interventions in buildings and infrastructures.

Future investigations at the intersection of urban science, mechanics, and energy are deemed necessary to expand the results provided by this exploratory work, in ways that can advance science, engineering, and technology and comprehensively inform revisions of urban planning strategies for different cities worldwide.

Communications Engineering **volume 2**, Article number: 44 (2023)

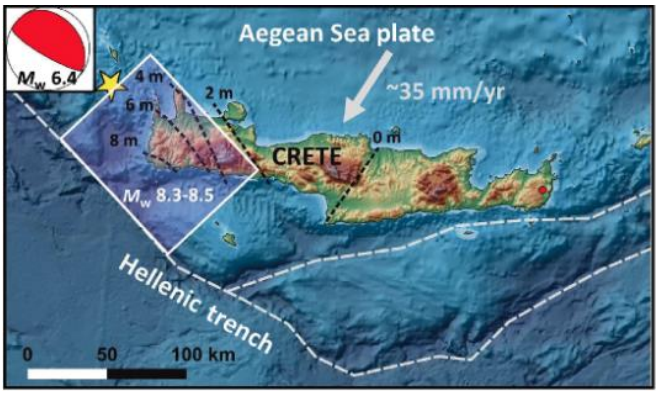
https://www.nature.com/articles/s44172-023-00092-1

What Was the Level of Ground Motion across Europe during the Great A.D. 365 Crete Earthquake?

Mathieu Causse; Emeline Maufroy; Lucile André; Pierre-Yves Bard

Abstract

Historical and archeological data report that an earthquake was felt over the whole eastern Mediterranean on 21 July A.D. 365. The impact of the tsunami it generated, which may have caused several thousands of fatalities, has been widely studied, whereas the impact of the seismic waves has hardly been explored. Here, we present simulations of the ground motion caused by the A.D. 365 event at 316 sites now instrumented by seismological stations throughout Europe. The simulation approach is based on the modeling of a series of rupture scenarios coupled with empirical Green's functions (EGFs) obtained at the stations from a recent *M*w 6.4 earthquake. The broadband and remarkably also the accelerometric records in urbanized areas can be exploited at distances as far as ~2000 km. Then, we use three empirical models to estimate the macroseismic intensity across Europe from the simulated peak ground accelerations and peak ground velocities. The presence of stations in thick sedimentary basins (lower Danube valley, Po plain, urban accelerometric network in the alpine valley of Grenoble) shows that local basin amplification effects can dominate acceleration values at frequencies favorable to human earthquake perception (~0.5–1 Hz), even for basins located at more than 1500 km from the earthquake. Thus, our simulations indicate that the A.D. 365 earthquake was likely felt by the populations as far as the Po plain and as the city of Grenoble, about 1800 km away, and presumably in other large European basins such as the Pannonian basin. It is possible that the perception of the earthquake up to such distances contributed to its "universal" character perpetuated in archival sources. At closer distances (300–500 km), the simulated intensity levels indicate that the earthquake probably caused no damage.



Seismological Research Letters (2023), July 20, 2023, https://doi.org/10.1785/0220220385

https://pubs.geoscienceworld.org/ssa/srl/article-abstract/doi/10.1785/0220220385/627144/What-Was-the-Level-of-Ground-Motion-across-Europe?redirectedFrom=fulltext

Re-Use Of Old Pile Foundations In Amsterdam

Marcel Bielefeld

The question of the continued suitability of existing foundations arises when the function of the superstructure changes. This can occur when the superstructure is replaced or when the existing structure is expanded, leading to higher loads on the existing foundation.

Obviously, the re-use of an existing foundations can contribute to a more sustainable society. But this may not be the only reason why an existing foundation is to be re-used: new foundation works could cause nuisance for neighbors or even damage to the adjacent buildings, the construction lots could be too small for modern foundation equipment or the mobilization of piles or concrete mix could be challenging. Finally, the decision to re-use an existing and proven foundation may be simply economical, as it will not only reduce the construction cost, but also shorten the schedule. Whatever the reason, before the existing foundation can be re-used there has to be an investigation to determine whether:

• the existing foundation is able to resist the new loads?

• the integrity of the existing foundation is such that it can perform during the extended lifespan?

Obviously, the existing foundation was tested during its lifecycle, since after installation it was loaded and thus tested, albeit to loads that are unknown. The foundation behavior under these loading conditions can in part be assessed from the condition of the superstructure, e.g., through the presence of cracks, if any, and differential settlements in the superstructure. Especially the latter is a good indicator as the presence of differential settlements is a strong warning signal that (at least parts of) the existing foundation are no longer adequate. At the same time, it must be remembered that the absence of cracks and differential settlements are not a guarantee for a sound foundation.

To calculate the capacity of the existing foundation one can rely on the old engineering reports and drawings. However, the soil situation can have been changed (e.g., as a result of nearby foundation activities, ground water flow, dewatering, etc.), in which case the previously derived design values are no longer applicable. It seems therefore more appropriate to perform a new soil investigation in or near the existing foundation to calculate the capacity or to perform a load test. However, all the as-built parameters (such as pile length and diameter) have to be known for a reliable outcome of those calculations. And given the uncertainty regarding the accuracy of as-built drawings (if those are even available), it may be that the most appropriate approach is to perform a load test.

The result of a load test is the load settlement diagram, irrespective of foundation dimensions and other unknown or uncertain factors. With the load- settlement in hand, one can determine the settlement at the working load and even the foundation's ultimate capacity (if tested up failure), which means that the investment in a load test eliminates the uncertainty of the foundation behavior.

The most suitable load test type for an existing foundation depends on the project.

- A Static Load Test can be done under the existing superstructure, where this superstructure is used as counterweight. The foundation is cut loose from the super-structure and a jack is positioned in between. After setting up load cells and instrumentation to register the settlement, the load test can start. Limitations here are the available counterweight and the stresses in the superstructure caused by the load test.

- A Dynamic Load Test (or a High Strain Dynamic Test as per the ASTM terminology) can only performed when the superstructure is demolished. Once the foundation is freely accessible, this type of test can be performed as usual, albeit that the impact stresses have to be controlled very carefully, especially in older existing foundations. Consequently, the resistance may not be fully mobilized with a dynamic load test. Additional limitations of this test method are that the impact may cause vibrations that could affect adjacent buildings and the fact that the analysis method of the test results does not have a unique solution. The Signal Matching process to interpretate and simulate the soil behaviour will have multiple solutions for the bearing capacity with similar signal match qualities, and the selection of the solution will be up to the analyst.

- A Rapid Load Test is a quasi-static test, so the load settlement diagram can be generated directly, based on measured forces and measured displacements. The maximum stresses during a Rapid Load Test are similar to that of a Static Load Test, thus avoiding the risk of pile damage. Most of the limitations listed for a Dynamic Load test do not apply to this test method: there are no issues with maximum stresses in the pile or vibrations in adjacent buildings, and the interpretation method is straightforward, and independent from the engineer who performs the analysis of the test results. However, a Rapid Load Test does also require that the superstructure is no longer in place.

An important factor in selecting the test method, is the moment of testing. If the question about reuse of the existing foundation has to be made prior to demolishing the superstructure, then static load test is the only available option. If the superstructure is only partly demolished, a rapid load test can be performed.

When the load test shows that the existing foundation can be re-used, there is still an important question that remains: will the existing foundation have an adequate remaining design life? To answer that question the potential for future foundation material deterioration (as a result of corrosion in case of steel piles, alkali-silica reaction or loss of cover in case of concrete piles, and dry rot and decay for timber piles as shown in Figure 1) needs to be assessed through inspection, in-situ testing (such as wall thickness measurements, Schmidt hammer and timber penetration hammer) and laboratory testing.

Fig. 1: Timber Piles of the Foundation

In the old inner cities of The Netherlands, evaluating existing foundations is nowadays common practice, not only for buildings, but also for structures like bridges as shown in Figure 2. Over time the traffic on the bridges in Amsterdam changed from light traffic of people, horse and carriages to that of cars and trucks, resulting in a tremendous increase in the foundation loads. Inspections had to assess the adequacy of these

existing foundations whenever bridge decks are replaced to meet the current functional requirements.

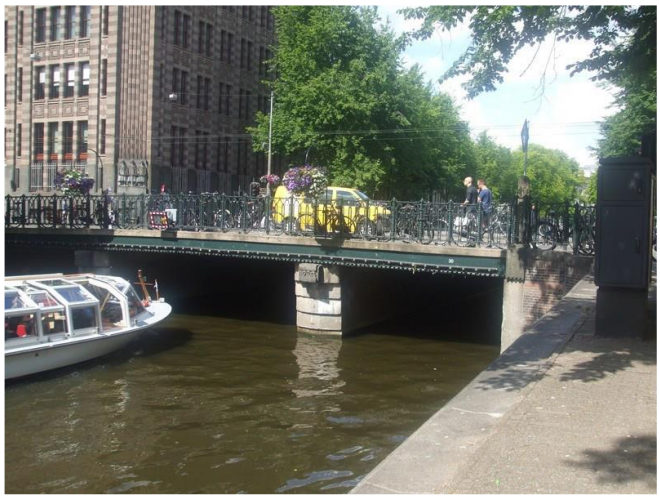


Fig. 2: One of the evaluated old bridges in Amsterdam, the Isa van Eeghenbrug

And as mentioned above, in case of a load test the test result is the load settlement diagram, such as shown in Figure 3. These results provide a very interesting insight in the behaviour of old timber piles. The assumption had been that these piles, that were installed between 1600 and 1940, had a capacity between 60 and 120 kN. However, the results indicated that the actual capacity may go as high as 420 kN, which easily explains why the existing foundations may very well be able to accommodate these tremendous increases in foundation loads.

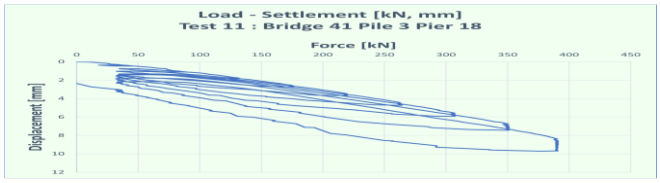


Fig. 3: Result of the static load test: the load settlement of one of the piles of bridge 41

One common misunderstanding regarding foundation re-use is that the existing foundation must be able to accommodate the entire loading from the superstructure. When the outcome of a foundation assessment is that the remaining design life is acceptable, but that the existing foundation has inadequate capacity to meet the new demands, there are still options to reuse the existing foundation. The superstructure can be designed such that loads are redistributed to an acceptable level for the existing foundation or piles can be added to supplement the existing foundation. However, such a hybrid foundation introduces a new design challenge, which is the differences in settlement between old and new foundation elements.

In any case, when the existing foundation can be re-used, it will give the owner significant advantages in costs and in construction time. And it will also contribute to a more sustainable society, where re-use, reduce and recycle is the standard.

See for the full paper:

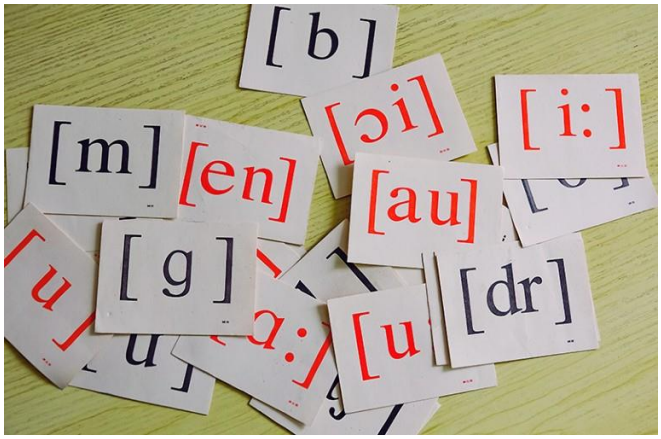
RE-USE OF OLD PILE FOUNDATIONS IN AMSTERDAM

Remco Offenberg, Martijn van Delft & Marcel Bielefeld, Allnamics Geotechnical & Pile Testing Experts, DFI-EFFC International Conference on Deep Foundations and Ground Improvement: Smart Construction for the Future, May 18–20, 2022 – Berlin, Germany

(DFI of INDIA News, Volume 9 Book 3, July 2023, pp. 3,4,15, https://www.india.dfi.org/publications/dfi-of-india-newsletters)

The true cost of science's language barrier for non-native English speakers

Survey quantifies the extra time that researchers whose first language isn't English need to read, write and present data.

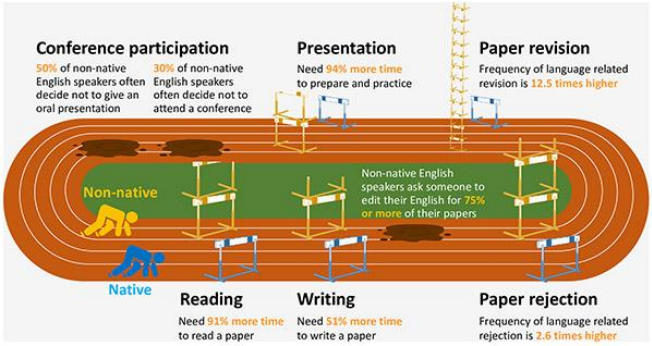


Some people use cards with phonetic symbols to help them learn English.Credit: Peng Song/Getty

Researchers whose first language is not English can spend around twice as long reading an English-language scientific journal article as native speakers. For a PhD student working on their thesis, that can mean spending up to 19 additional working days per year just reading papers.

These statistics, published today in *PLoS Biology*[1], might not be shocking, researchers say, but it's important to measure the effects of language barriers on the careers of academics who are not fluent in English. It "is the first step for the scientific community to make more effort to tackle this problem", says Tatsuya Amano, a biodiversity researcher at the University of Queensland in Brisbane, Australia, and a co-author of the study.

Amano and his colleagues polled 908 environmental scientists from 8 countries, each of whom had authored at least one peer-reviewed paper in English. Some of the participants were from countries where a moderate proportion of people are proficient in English (Bolivia, Spain and Ukraine), whereas others were from countries where proficiency in English is uncommon (Bangladesh, Japan and Nepal). Their answers were compared with those from people in countries where English is the official language (Nigeria and the United Kingdom).



The team found that among scientists who had published only one paper in English, those from countries with generally low English proficiency spent a median of 29.8% more time writing it than did native speakers; those from countries with moderate English proficiency spent a median of 50.6% more time. Similarly, the researchers found that those from countries with generally low English proficiency spend a median of 90.8% more time reading scientific articles than do native speakers. They also learnt that non-native speakers spend more time preparing to give oral presentations at international conferences, and that many avoid this type of commitment owing to language barriers.

Amano, who is Japanese, says he has always struggled to communicate in English. After many years working in the United Kingdom and Australia, his English is improving, and people might think his papers are similar to those written by a native English speaker. "But behind the scenes, I have to spend so much time to reach that level," he says. That extra effort is exactly what he wanted to quantify in this study.

Heightened rejection

Amano and his colleagues also examined the peer-review process. Non-native English speakers reported having their papers rejected specifically because of writing issues 2.5 times as often as native speakers. That sounds familiar to Lina Pérez-Angel, a Colombian palaeoclimatologist at Brown University in Providence, Rhode Island. "I have had reviewers that explicitly said that my English puts in doubt the quality of the research, or mostly gave me feedback on my English in a harsh way that made me think it was based on my Latinx/Hispanic-sounding last name," she says.

And the challenges are not limited to papers and presentations, says Paula Iturralde-Pólit, an Ecuadorian ecologist at the University of Costa Rica in San José. "It's in every step in the process of becoming an academic," she says. In her experience, applying for grants to fund research projects, for example, takes much longer for someone not highly proficient in English. "It also takes more time for your adviser to review it, because you will have more errors."

At conferences, even those who overcome the hurdle of presenting their work in English face difficulties. Germana Barata, a researcher who specializes in science communication at the State University of Campinas in Brazil, says that despite being fluent in English, she still feels uncomfortable at times. "We are given the same amount of time to present, but what we can say in 10 minutes is different from what a native speaker can say," she points out.

The study has probably underestimated the impact of language barriers, because it doesn't account for people who drop out of academia owing to the challenges described, Amano notes. Many of those who remain, Barata says, feel that language acts as an obstacle to sharing their work and advancing their careers. "We have a much longer and slower journey to project ourselves and to have our work projected abroad," she says.

Amano thinks that solving the problem should not be the responsibility solely of the people experiencing the language barrier. Journals could provide access to artificial-intelligence tools to assist researchers with writing, for example, or could connect authors with proficient English speakers to help review their articles. Conferences could consider allowing researchers to present in their native language, using a translator, and could publish abstracts in multiple languages. "Non-native English speakers constitute almost 95% of the world's population," Amano says. "If we don't support those 95%, I'm sure we can't solve many global challenges."

References

1. Amano, T. *et al. PLoS Biol.* **21**, e3002184 (2023).

doi: https://doi.org/10.1038/d41586-023-02320-2

(Mariana Lenharo / Nature, 18 July 2023, https://www.nature.com/articles/d41586-023-02320-2)

ΝΕΑ ΑΠΟ ΤΙΣ ΕΛΛΗΝΙΚΕΣ ΚΑΙ ΔΙΕΘΝΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΝΩΣΕΙΣ

International Society for Soil Mechanics and Geotechnical Engineering

ISSMGE News & Information Circular
July 2023
www.issmge.org/news/issmge-news-and-information-circular-July-2023

1. Proceedings from the 20th International Conference on Soil Mechanics and Geotechnical Engineering are available in open access

ISSMGE is pleased to announce that through the initiative of Prof. Mark Jaksa, Co-Editor of 20ICSMGE, the 905 papers from the proceedings of the 20th International Conference on Soil Mechanics and Geotechnical Engineering (20ICSMGE) are available in the ISSMGE Online Library here: https://www.issmge.org/publications/online-library
20ICSMGE was held in Sydney, Australia from May 1st to May 5th in 2022.

In the Online Library, you may also find the 109 papers from the proceedings of the 7th International Young Geotechnical Engineers Conference (7iYGEC) which was held a few days before 20ICMGE, from April 29th to May 1st 2022.

Detailed acknowledgements for both 20ICSMGE and 7iYGEC can be found at the ISSMGE online library acknowledgements section.

2. Proceedings from the 9th International Congress on Environmental Geotechnics (ICEG2023) are available in open access

ISSMGE is pleased to announce that the 244 papers from the proceedings of the 9th International Congress on Environmental Geotechnics (ICEG2023) are made available in the ISSMGE Online Library here: https://www.issmge.org/publications/online-library/conferences/iceg2023

The abstracts and papers of the proceedings were reviewed through ISSMGEs Conference Review Platform which is part of its cyber-infrastructure aiming to support open access. The technical editors are Tugce Baser, Arvin Farid, Xunchang Fei and Dimitrios Zekkos.

ICEG2023 was held in Chania, Crete, Greece from June 25th to June 28th in 2023.

3. ISSMGE HERITAGE TIME CAPSULE (HTC) UPDATE

The HTC session at the 17th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering 2023 (17 ARC) will feature member societies and technical committees in the ISSMGE Asian region sharing their HTC contributions, followed by a panel discussion by distinguished persons. Please contact YMPG (Young Member Presidential Group) Core Team Member, Associate Professor Mingliang Zhou at Tongji University (zhoum@tongji.edu.cn), for further information or to express interest in contributing to the HTC session.

As part of a process of fast tracking of HTC contributions, in June 2023, bulletin articles were authorised for uploading in Part A of the HTC (https://www.issmge.org/the-society/time-capsule/part-a) for the following,

- Belorussian Geotechnical Society
- Groupement Belge de la SIMSG
- Geotechnical Society of Bosnia and Herzegovina
- Croatian Geotechnical Society
- Czech and Slovak Committee for SMFE
- Danish Geotechnical Society
- Deutsche Gesellschaft für Geotechnik
- Polish Committee on Geotechnics
- Swedish Geotechnical Society
- TC 222 - Geotechnical BIM and Digital Twins

4. ISSMGE BULLETIN

The latest edition of the ISSMGE Bulletin (Volume 17, Issue 3, June 2023) is available from the website.

5. ISSMGE FOUNDATION

The next deadline for receipt of applications for awards from the ISSMGE Foundation is the 30th September 2023. Click here for further information on the ISSMGE Foundation.

6. CONFERENCES

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

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

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

ISSMGE EVENTS

SUT OSIG 9TH INTERNATIONAL CONFERENCE INNOVATIVE GEOTECHNOLOGIES FOR ENERGY TRANSITION - 12-09-2023 - 14-09-2023 Imperial College London, United Kingdom; Language: English; Organiser: Society for Underwater Technology; Offshore Site Investigation & Geotechnics Committee; ISSMGE TC209; Contact person: Jacqui Adams ; Address: SUT, HQS Wellington, Victoria Embankment, London WC2R 2PN; Email: osig2023@sut.org; Website: http://www.osig2023.com;

INTERNATIONAL FOUNDATION CONGRESS AND EQUIPMENT EXPO - 07-05-2024 - 10-05-2024 Hyatt Regency Dallas, United States; Language: English; Organiser: DFI, ADSC, GeoInstitute of ASCE, PDCA; Contact person: Peggy Hagerty-Duffy; Address: PO Box 93583; Phone: (469) 359-6000; Email: phd@adsc-iafd.com; Website: http://ifcee2024.com; Email: adsc@adsc-iafd.com

XVII PANAMERICAN CONFERENCE ON SOIL MECHANICS AND GEOTECHNICAL ENGINEERING, 12-11-2024 - 17-11-2024 La Serena, Chile , La Serena; Languages: Spanish, English; Organiser: Chilean Geotechnical Society (SOCHIGE); Contact person: Omar Núñez Esper; Address: San Martín 352, Santiago; Email: info@panamgeochile2024.cl; Website: https://panamgeochile2024.cl: Email: info@panamgeochile2024.cl

NON-ISSMGE EVENTS

31ST BUCHANAN LECTURE - 19-10-2023 - 20-10-2023 Hilton College Station and Conference Center, College Station; Language: English; Organiser: Jean-Louis Briaud ; Contact person: Blake Thurman; Address: 3136 TAMU; Phone: 9039797022; Email: blake960@tamu.edu; Website: https://briaud.engr.tamu.edu/buchananlecture/; Email: briaud@tamu.edu

INTERNATIONAL CONFERENCE ON GEOTECHNICAL ENGINEERING (ICGE'24) - 25-04-2024 - 27-04-2024 Hammamet, Tunisia; Language: English; Organiser: The Geotechnical and Georisk Research Laboratory; Contact person: National Engineering School of Tunis; Address: BP 37 Le Belvédère; Email: contact@icge24.com: Website: http://www.icge24.com;

2024 GEOSHANGHAI INTERNATIONAL CONFERENCE - 26-05-2024 - 29-05-2024 Tongji University, WH Ming Hotel, Shanghai, China; Language: English; Organiser: Tongji University; Contact person: Mingliang Zhou; Address: Department of Geotechnical Engineering, College of Civil Engineering, Tongji University; Phone: +86-13918955481; Email: geoshanghai@tongji.edu.cn; Website: http://www.geo-shanghai.org

2ND ANNUAL CONFERENCE ON FOUNDATION DECARBONIZATION AND RE-USE- 28-05-2024 - 30-05-2024 Royal Tropical Institute (KIT), Amsterdam, Netherlands; Language: English; Organiser: KIVI, DFI; Contact person: Angelique van Tongeren; Address: Prinsessegracht 23; Phone: 0630095962; Email: info@foundationreuse.com; Website: https://foundationreuse.com/; Email: info@foundationreuse.com

Proceedings from the 20th International Conference on Soil Mechanics and Geotechnical Engineering are available in open access

ISSMGE IT Administrator / General / 06-07-2023

ISSMGE is pleased to announce that through the initiative of Profs. Mark Jaksa and Mizanur Rahman, Editors of 20ICSMGE, the 905 papers from the proceedings of the 20th International Conference on Soil Mechanics and Geotechnical Engineering (20ICSMGE) are available in the ISSMGE Online Library here: https://www.issmge.org/publications/online-library

20ICSMGE was held in Sydney, Australia from May 1st to May 5th in 2022.

In the Online Library, you may also find the 109 papers from the proceedings of the 7th International Young Geotechnical Engineers Conference (7iYGEC) which was held a few days before 20ICMGE, from April 29th to May 1st 2022.

Detailed acknowledgements for both 20ICSMGE and 7iYGEC can be found at the ISSMGE online library acknowledgements section.

ISSMGE Interactive Technical Talk Episode 7: Preservation of Historic Sites (TC301)

ISSMGE IT Administrator / TC301 / 10-07-2023

The seventh episode of International Interactive Technical Talk has just been launched and is supported by TC301. Dr. Christos Tsatsanifos, Dr. Durgadevagi Shanmugavel, Dr. Efrain Ovando-Shelley and Dr. Mai Sawada are discussing with Dr. Marc Ballouz about Preservation of Historic Sites.

Watch ISSMGE Interactive Technical Talks

2023 Buchanan Lecture

ISSMGE IT Administrator / General / 10-07-2023

Dear Colleague,

The 2023 Buchanan Lecturer is Dr. Marc Ballouz who is the President of the International Society of Soil Mechanics and Geotechnical Engineering, CEO of IGM and Senior Lecturer at Texas State University. Dr. Ballouz served on the Geo-Institute of ASCE Board of Governors and has been a consultant in many countries around the world. Dr. Ballouzs lecture is entitled Geotechnical Engineering Marriage between Theory and Practice.

Also on the agenda is Dr. Edward Kavazanjian Jr., who will be presenting his 2022 Terzaghi Lecture entitled Bio-mediated Geotechnics for Hazard Mitigation, Environmental Protection, and Infrastructure Construction. Dr. Kavazanjian is a Regents Professor and the Ira A. Fulton Professor of Geotechnical Engineering in the School of Sustainable Engineering and the Built Environment in the Ira A. Fulton Schools of Engineering at Arizona State University (ASU).

The lectures will take place in person at the Hilton Hotel and Conference Center in College Station, TX, and will begin at 2:00 pm US Central Time on October 20th, 2023. Please relay to colleagues and students. A video will be posted here afterwards for those who are unable to attend. I hope to see many of you at the lecture which will be followed by a photo and a reception for all participants at our house.

Marc Ballouz Abstract
Marc Ballouz Bio
Edward Kavazanjian Abstract and Bio

Best wishes, Jean-Louis.

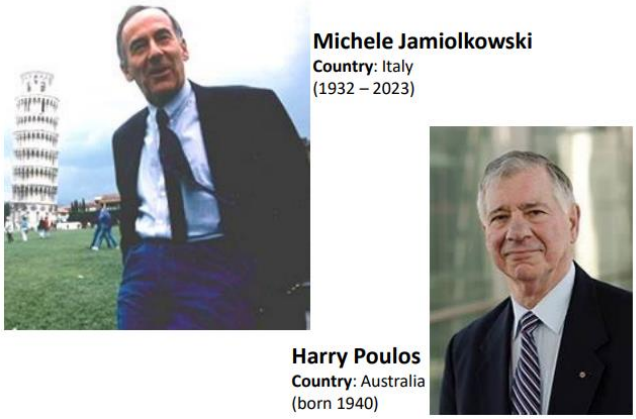
Jean-Louis BRIAUD, PhD, PE, DGE, Distinguished Member ASCE
ASCE President 2021
University Distinguished Professor and Buchanan Chair Holder
Texas A&M University
College Station, Texas, 77843-3136, USA

2023 ISSMGE Lifetime Achievement Medal (ILAM)

ISSMGE IT Administrator / General / 17-07-2023

The ISSMGE is pleased to announce the two winners for the 2023 ISSMGE LIFETIME ACHIEVEMENT MEDAL (ILAM) : Prof. Michele Jamiolkowski, and Prof. Harry Poulos.

The 2 winners were chosen by the ISSMGE Board on Friday the 16th of June, 2023, after the Awards Committee (AWAC) had reviewed the nominations of 16 candidates representing all 6 regions from around the world, and meeting stringent rules and criteria. Sadly, one day prior, the geotechnical community was devastated by the passing of the first winner, Prof. Jamiolkowski, a true international geo-legend. According to the rules, the medals will be delivered soon to the winners by the President or the Vice-President of ISSMGE. This medal is awarded twice per year.



ISSMGE Interactive Technical Talk Episode 8: Reinforced Fill Structures (TC218)

ISSMGE IT Administrator / TC218 / 18-07-2023

The eighth episode of International Interactive Technical Talk has just been launched and is supported by TC218. Dr.-Ing. Oliver Detert, Dr. Jorge G. Zornberg and Brobbey Daniel Ackah are discussing with Dr. Marc Ballouz about Reinforced Fill Structures.

Watch ISSMGE Interactive Technical Talks

International Society for Rock Mechanics and Rock Engineering
ISRM

News
https://www.isrm.net

43rd ISRM online lecture

The 43rd ISRM online lecture will be delivered by **Professor Anna Maria Ferrero**, from Italy. The lecture title is: "**Design of rock fall protection works**". It will broadcast on September 2023, at this page.

Prof. Anna Maria Ferrero's bio

Anna Maria Margherita Ferrero is a Professor in Geotechnics at the Department of Earth Science in the University of Turin, Italy.

She graduated in Civil Engineering and received her PhD in Georesources at the Polytechnic of Turin, Italy; she obtained her Diploma of the Imperial College of London in Rock Mechanics in 1996.

Her main activity deals with different subject of rock mechanics and rock engineering and in particular, the study of the mechanical behaviour of rock materials, rock discontinuities and rock masses, the development of new methodology for rock characterization and monitoring, the study of rock degradation with climate changes and pollution. She worked in the numerical modelling development applied to the stability analysis of rock masses by FEM and DEM modelling.

Since 2022 she is deputy director for research at the Department of Earth Science, former deputy director for teaching (2019-2022) and coordinator for the PhD school in Earth Science (2012-2021).

Since 2022 she is vice president of the Italian national group of geotechnical engineers (CNRIG), she has been member of the board of presidents of the Italian Geotechnical Association (AGI) and vice president of the association of georesources and environment (GEAM). In 2022 delegated by the rector of UNITO for the Natural, Environmental and Anthropic Risk research of the national research and development plan (PNRR).

In 2021 co-chair of the international conference EUROCK 2021, she has been member of the scientific committee of several conferences in the rock mechanic's sector.

She gave several invited talks and keynotes in international events, such as: II World Landslide Forum, 2011, Rome; Eurock 2014, Vigo, Spain; 2014; XXV AGI conference, Baveno, Italy 2014; MAG's Fifth Symposium, North Macedonia 2022; Jean Mandel Lecture, Paris France (2022).

She is Associated Editor of the journal Rock Mechanics and Rock Engineering; former associated editor of Géotechnique Letters for the rock mechanics area and the Arabian journal of Geosciences; she is in the editorial board of several national and international journals in Rock Mechanics and related fields. She is consultant for geotechnical aspects in different mining and civil works and auditor for the allocation of funding for research projects in the field of Geotechnical Engineering for the Italian minister of research and for the European Union.

She tutored 12 PhD students and several Master course students at the Polytechnic of Turin, at the University of Parma and Turin.

Follow this link to watch the lecture.

Course on Slope Engineering

The online course of Slope Engineering was recorded by Professor Wu Shunchuan from Kunming University of Science and Technology, China. Focusing on the stability of slope engineering, the course starts from the basic concept and theory of slope, and then introduces the influencing factors, calculation methods, treatment measures and engineering effect monitoring of slope stability. The course has 10 parts, with a total of 37 lectures.

Table of Contents

ASSOCIATION INTERNATIONALE DES TUNNELS ET DE L'ESPACE SOUTERRAIN
ITA
AITES
INTERNATIONAL TUNNELLING AND UNDERGROUND SPACE ASSOCIATION

NEWS - ITA ACTIVITIES

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

ITACET Lunchtime Lecture Series #28 13 July 2023

The 28th instalment of the Lunchtime Lecture Series will be organised in coordination with ITACUS on Tuesday the 12th of September.

This episode will focus on "Planning for the subsurface and underground space use" featuring 3 lecturers:

- Insights and philosophy of using the underground: Han Admiraal (Itacus co-chair)
- Policy development and case examples: Antonia Cornaro (Itacus co-chair)
- Underground urbanism in Africa: Abidemi Agwor (Itacus National Action Think Deep Programme Lead)

Following these lectures, a Q&A session will enable participants to put their questions to the speakers.

To register for this event, please visit the ITACET Foundation website: https://www.itacet.org/session/lunchtime-lecture-series28

Scooped by ITA-AITES #96, 11 July 2023

First section of Milan Line M4 opens | Italy

Second Avenue subway Phase 2 on track for Harlem | United States of America

Tunneling 2023: A snapshot of the North American tunneling market

Gateway Tunnel awarded largest-ever federal transit grant | United States of America

London Super Sewer gets underground flower garden | UK

The world's 5 best metros currently under construction

Tunnelling underway on Sydney Metro's Western Sydney Airport Project | Australia

RFQ issued for George Massey Tunnel replacement | Canada

BMC gets three bids for construction of underground tunnels in GMLR project | India

LBNF/DUNE gears up for next stage of construction in South Dakota | United States of America

Scooped by ITA-AITES #97, 25 July 2023

Work starts on next phase of Türkiye – Bulgaria railway reconstruction

Mont Cenis base tunnel TBM passes FAT | France & Italy

Western Sydney Airport project EPBM launched | Australia

Rail removes one million tonnes of spoil for HS2 | UK

Stonehenge road tunnel plans approved by transport secretary | UK

Bengaluru Metro: Pink Line likely to be operationalised by March 2025 | India

Deep underground tunnels could hold the key to habitability on Mars | UK

Dragging method being used for underground metro station | India

Autumn start for Shannon tunnelling work | Ireland

The incredible tunnels pushing deep below the surface

Underground tunnels offer an escape from the heat | United States of America

Shetland tunnel push by Unst, Yell to tackle ferries | UK

INTERNATIONAL GEOSYNTHETICS SOCIETY

News

IGS Establishes Diversity Task Force July 3, 2023
A team dedicated to boosting diversity, equality and inclusion in the IGS has been launched. Led by IGS Secretary General

Laura Carbone, the IGS Diversity Read More »

Finalists Announced For 12th ICG Young Paper Award Contest July 6, 2023
Young engineers shortlisted for the Best Young Member Paper prize at the 12th International Conference on Geosynthetics (ICG) have been revealed. Ten Young Members will Read More »

Did You Know?… Geosynthetics Remove Microplastics From Treated Water July 10, 2023
Sludge is a semi-solid slurry that can be produced from a range of industrial processes, from water treatment, wastewater treatment or on-site sanitation systems. Geosynthetics are Read More »

IGS Strategy Goal Series – Strengthening *Trust* In The IGS July 12, 2023
Trust is at the core of the IGS's ambitious new plans for the years ahead. Building a credible organization that attracts and maintains the confidence Read More »

IGS Foundation Adds Online Donation Tool July 13, 2023
Now it's even easier to give to the IGS Foundation (IGSF) with the launch of its online payments facility. The IGSF, which supports the educational initiatives Read More »

Second Call For Young Member 12th ICG Travel Grant Launched! July 18, 2023
The IGS Young Members in collaboration with the IGS Foundation (IGSF) has launched a second call for Young Members to apply for the travel grant Read More »

Job Shadow Program Launch For IGS Morocco July 20, 2023
Three talented students from the National School of Mines of Rabat (ENSMR) got a taste of working life thanks to the IGS Job Shadowing Program. Read More »

IGS Colombia Hosts Geosynthetic Reinforcement Talk July 21, 2023
IGS Ambassador Patricia Guerra-Escobar visited Bogotá recently to speak to members of IGS Colombia in the latest of their busy activities program. Ms Guerra-Escobar, who Read More »

ΠΡΟΣΕΧΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ

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

STPRFC 3rd Edition Short-Term Prediction of Rock Failure Competition August 2023, Taiyuan, China, alv-1001@163.com, zc-feng@163.com

S3: Slopes, Support and Stabilization Conference, August 8-10, 2023, Boston, USA, www.dfi.org/s32023

17ARC 17th Asian Regional Geotechnical Engineering Conference, 14-18 August 2023, Nur-Sultan, Kazakhstan, https://17arc.org

ICTUS23 (ASEM23) The 2023 International Conference on Tunnels and Underground Spaces, 18 August 2023, Seoul, Korea, http://asem23.org/

ISMLG 2023 – 4th International Symposium on Machine Learning & Big Data in Geoscience, 29 August - 1 September 2023, University College Cork, Ireland, www.ismlg2023.com

IS-PORTO 2023 8th International Symposium on Deformation Characteristics of Geomaterials, 3rd - 6th September 2023, Porto, Portugal, www.fe.up.pt/is-porto2023

6th Meeting of EWG Dams and Earthquakes Workshop on Case studies, September 5, 2023, Interlaken, Switzerland, guillaume.veylon@inrae.fr

12th ICOLD European Club Symposium "Role of dams and reservoirs in a successful energy transition", 5 to 8 September 2023, Interlakes, Switzerland, www.ecsymposium2023.ch

NGS 2023 10th Nordic Grouting Symposium, 11 - 13 September, 2023, Stockholm, Sweden www.ngs2023.se

SUT OSIG 9th International Conference "Innovative Geotechnologies for Energy Transition", 12-14 September 2023, London, UK, www.osig2023.com, www.sut.org

SAHC 2023 13th International Conference on Structural Analysis of Historical Constructions "Heritage conservation across boundaries", 12-15 September 2023, Kyoto, Japan, https://sahc2023.org/

TKZ2023 XX Technical Dam Control International Conference Safety of Hydraulic Structures, 12-15 September 2023, Chorzów Poland https://tkz.is.pw.edu.pl

Underground Singapore 2023, 14 -15 September 2023, Singapore, www.tucss.org.sg/ugs/2

The 11th International Conference on Scour and Erosion 17-21, September 2023, Copenhagen, Denmark, https://icse11.org

XII ICG - 12th International Conference on Geosynthetics, September 17 – 21, 2023, Rome, Italy, www.12icg-roma.org

GROUND ENGINEERING SUSTAINABILITY, 21 September 2023, London, U.K., https://sustainability.geplus.co.uk/sustainability/en/page/home

Underground Built Heritage as Catalyser for Community Valorisation, 21 September 2023, Brussels, Belgium, www.underground4value.eu

Charles-Augustin COULOMB : A geotechnical tribute, 25 – 26 September 2023, Paris, France, www.cfms-sols.org/organisees-par-le-cfms/charles-augustin-coulomb-geotechnical-tribute

GEOCASE 2023 International Conference on "Case Histories In Geotechnical Engineering" & 4th AsRTC6 Urban Geoengineering Symposium, September 25 - 28, 2023, Bandung, Indonesia, www.geocase2023.com

InFUM - 1st International Symposium on Fiber Shotcrete for Underground Mining, October 1st to 4th, 2023, Rio de Janeiro, Brazil, https://infum.com.br

AFTES 2023 17th International Congress "Underground space at the heart of transitions", 2-4 October 2023, Paris, France, https://aftes2023.com/en

SEG23 Symposium on Energy Geotechnics, 3-5 October 2023, Delft, The Netherlands, https://seg23.dryfta.com

28th European Young Geotechnical Engineers Conference and Geogames
04 – 07 October 2023, Moscow, Russia

Organiser: Russian Society for Soil Mechanics, Geotechnics and Foundation Engineering

Contact person: PhD Ivan Luzin
Address: NR MSUCE, 26 Yaroslavskoye shosse
Phone: +7-495-287-4914 (2384)
Email: youngburo@gmail.com

GROUND ENGINEERING BASEMENTS AND UNDERGROUND STRUCTURES, 5 October 2023, London, U.K., https://basements.geplus.co.uk/basements2023/en/page/home

GROUND ENGINEERING SMART GEOTECHNICS, 5 October 2023, London, U.K., https://smartgeotechnics.geplus.co.uk/smartgeotechnics2023/en/page/home

MSL 2023 The Second Mediterranean Symposium on Landslides "Slope Stability in Stiff Fissured Clays and Soft Rocks", October 5-7, 2023, Hammamet, Tunisia, https://msl-2023.webnode.fr

2023 15th ISRM Congress, International Congress in Rock Mechanics Challenges in Rock Mechanics and Rock Engineering,

9÷14 October 2023, Salzburg, Austria, https://www.isrm2023.info/en/

11th International Symposium on Ground Freezing (ISGF), 13 October 2023, London, United Kingdom, www.iom3.org/events-awards/11th-international-symposium-on-ground-freezing.html

HYDRO 2023 New Ideas for Proven Resources, 16-18 October 2023, Edinburgh, Scotland, www.hydropower-dams.com/hydro-2023

1-ICGTMW2023 1st International Conference on Geotechnics of Tailings and Mine Waste & GEOMIN 2023, 24th to 26th, October 2023, Ouro Preto, Minas Gerais, Brazil, https://geominouropreto.com.br/2023/icgtmw2023

SEAGC-AGSSEA 2023 21st Southeast Asian Geotechnical Conference & 4th AGSSEA Conference, 25th to 27th October 2023, Bangkok Thailand, https://seagcagssea2023.com

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

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

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

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

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

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

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

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

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

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

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

A three day symposium on Geotechnical Aspects of Heritage Structures (SGHS 2024) is organized to celebrate the 75th year of the Indian Geotechnical Society (IGS) by the IGS Trichy chapter in collaboration with National Institute of Technology, Tiruchirappalli and National Institute of Technology, Puducherry under the aegis of Technical Committee (TC301) of International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE).

India is a place resplendent with heritage structures back from 9,500 years ago. The heritage buildings in India reflect the most advanced architectural designs and engineering significance, evident in the lifetime of the structures were withstanding. These structures have withstood many unforeseen natural and manmade disasters. It is a wonder that these structures were recovered from such a calamity. These structures are withstanding because of better knowledge in designing the sub-structures and super-structures of the engineers in those days.

Among the heritage places in India, Tiruchirappalli is celebrated as one of the oldest cities of Tamil Nadu, in which many dynasties set their supremacy and built monuments to record their existence. Some prominent structures with outstanding monuments and architectural designs were Kallani Dam, Thanjavur Brihadisvara temple, etc. It was built thousands of years ago, and they are capable of withstanding despite facing many wars and natural calamities. Among them, Thanjavur Brihadisvara temple is recognized as a UNESCO World Heritage Site.

In this regard, the symposium focuses on the geological and geotechnical challenges on heritage structures, geohazard assessment on heritage structures, and Geotechnical Investigations towards repair and rehabilitation of heritage structure is proposed.

Themes Of Symposium

- **Geological and geotechnical challenges in historical sites**
  The geological and geotechnical characteristics of different historical sites, including underground and rock-cut sites, in India and overseas will be the main focus.

- **Diagnostics of distress**
  A significant difficulty is determining the type and severity of distress in historic buildings without sacrificing their historic significance. Although non-destructive testing techniques (such as GPR, Tomography, MASW, etc.) are typically used, intrusive tests are occasionally performed as part of diagnostic investigations. The most recent innovations and cutting-edge practice will be discussed during the conference.

- **Heritage geotechnics**
  Under this theme, several types of foundations will be identified, along with the materials utilized and any related issues.

- **Geohazards and heritage**
  Geohazards including earthquakes, cloudbursts, and slope collapses have lately destroyed a number of historic structures, making their preservation extremely difficult. One of the main issues of this conference will be risk assessment, tactics, and preventative actions against such natural disasters.

- **Geotechnical Safety assessment**
  This theme will cover the identification of failure processes in foundations, retaining structures, and underground structures as well as innovative approaches for deterministic and probabilistic safety evaluation.

- **Numerical modelling strategies**
  Within this theme, recent developments in numerical modeling of the substructure, foundation soil, and soil-structure interaction will be discussed as they relate to safety assessments of historical sites and structures.

- **Geotechnical interventions towards rehabilitation**
  Under this theme, recent cutting-edge rehabilitation methods will be explored, together with their design principles, to solve geotechnical distress in old foundations, earth-retaining structures, or underground structures.

- **Case studies on Historical sites**
  The symposium will serve as a forum for the discussion of key case studies that are very instructional either because of the difficult geotechnical distresses they experienced or because of the innovative solutions created or implemented to secure the safety and preservation of the historical sites.

- **Geotechnical Investigation, monitoring and performance assessment**
  This theme will cover the geotechnical-based investigations for effective monitoring of heritage structures and the development of warning systems

- **Soil structure interaction aspects of heritage structures**
  Under this theme, the state-of-the-art technology and methods for the investigation of soil-structure interaction and mitigation measures for controlling these effects on heritage structures will be considered.

- **Other topics related to Heritage Structures**
  Any contributions related to the heritage structures will be considered under this theme.

To Contact

Mr. T. Jegadeesh Kumar
Department of Civil Engineering, NIT Trichy, Tiruchirappalli – 620015.
Event Email: isghs2024@gmail.com
IGS Trichy Chapter Email: igs.trichy@gmail.com
Phone: 0431-2503198
Website: www.isghs2024.in, www.igstrichy.org

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

7th International Conference Series on Geotechnics, Civil Engineering and Structures Advances in Urban Planning, Architecture and Construction for Sustainable Development
April 4-5, 2024, Ho Chi Minh City, Vietnam
https://cigos2024.sciencesconf.org

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

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

Topics

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

Contact

Email: cigos2024@sciencesconf.org

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

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

GEO AMERICAS 2024 5th Pan-American Conference on Geosynthetics Connecting State of the Art to State of Practice

April 28 – May 1, 2024, Toronto, Canada, www.geoamericas2024.org

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

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

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

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

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

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

28th European Young Geotechnical Engineers, Conference 2024
25 to 29 June 2024, Skopje, North Macedonia

Contact person: Ms. Elena Angelova
Address: Blvd. Partizanski odredi No.24,
Email: mag@gf.ukim.edu.mk
Website : https://mag.net.mk

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

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

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

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

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

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

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

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

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

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

ECPMG 2024

5th European Conference on Physical Modelling In Geotechnics
02 to 04 October 2024, Delft, Netherlands
https://tc104-issmge.com/ecpmg-2024/

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

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

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

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

Editorial Board

Miguel Angel Cabrera Lead Editor m.a.cabrera@tudelft.nl

Suzanne van Eekelen Co-Editor suzanne.vaneekelen@deltares.nl

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

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

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

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

Welcome to Sweden, we are excited to meet all of you in the spring of 2025

Sweden will shortly be one of the world's first sustainable and fossil free nations. By the year 2045, Sweden's net greenhouse gas emissions to the atmosphere will then be less than zero! This is a work in progress and development of technologies and methods is accelerating. As we have done in the past, we want to share our knowledge and experiences with all of you, and gain knowledge and experiences from you, this time by hosting the World tunnel congress 2025, WTC2025.

More than a hundred years ago we were the cradle were new technologies were nourished, the dynamite, effective machinery and production methods. Despite our relative small country we are still leading the way, building one of the most complex underground road tunnel networks, the Bypass Stockholm. A new metro with one of the deepest underground stations only accessible by elevators. And large rock caverns to store liquid hydrogen with the purpose to produce fossil free steel.

Sweden's experience of underground construction dates back more than a century. This development is sometimes referred to as being a result of good rock conditions and close cooperation between owners, consultants, contractors and machinery manufacturers.

Examples of early use of the underground, other than for mining purposes, include hydroelectric power plants, traffic tunnels and military facilities, including public shelters. The knowledge that has been gained has during the last century been shared with the rest of the world and then refined by all of you.

For questions please contact
Meetagain AB
support@meetagain.se
+46 (0)8 664 58 00

Eurock 2025
ISRM European Rock Mechanics Symposium
Expanding the underground space - future development of the subsurface - an ISRM Regional Symposium
16–20 June 2025, Trondheim, Norway

Contact Person Name

Henki Ødegaard
Email henki.oedegaard@multiconsult.no
Telephone +47 22 94 75 00
Address C/O Fredrik Stray, TEKNA, PO box 2312 Solli, Oslo, Norway

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

Organisers:

Austrian Geotechnical Society and Austrian Society for Geomechanics

Contact person: Prof. Helmut F. Schweiger

Email: helmut.schweiger@tugraz.at

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

Scope

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

- Fundamental rock mechanics
- Laboratory and field testing and physical modeling of rock mass
- Analytical and numerical methods in rock mechanics and rock engineering
- Underground excavations in civil and mining engineering

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

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

ΕΝΔΙΑΦΕΡΟΝΤΑ ΓΕΩΤΕΧΝΙΚΑ ΝΕΑ

Massive landslip blocks Seatown Beach in Dorset, UK

Aerial view of Thursday's landslide (credits James Loveridge, BNPS)

A massive rockfall occurred on the cliffs of Seatown in Dorset, UK, overnight on Thursday.

Furthermore, the same cliffs have also been subject to a rockslide that blocked the beach previously, in 2021. It was then reported by The Guardian that the event was the largest rockslide in the UK in the last 60 years. However, eyewitnesses think that last Thursday's landslip was even bigger.

It is believed that the previous rockslide in the area had weakened the cliffs' support, while drone pictures taken back in January of 2023 show deep vertical cracks along the area, foreshadowing the event.

The area had been hit by extreme weather conditions prior to the landslip. More specifically, local geologist Richard Edmonds said that it is surprising for a large landslide to occur this late in the year, but torrential rain the Saturday before the event could have played a part.

It is also worth noting that the torrential rain was followed by very dry climate conditions.

Finally, Edmonds also noted that the area's geology can be characterized as a complex cliff, comprised of successive layers of sand and clay materials.

https://www.youtube.com/watch?v=q7_vyyBpN3U

No one was injured in the overnight event, while warning signs had also been put up along with advice from the local Council for people to take caution.

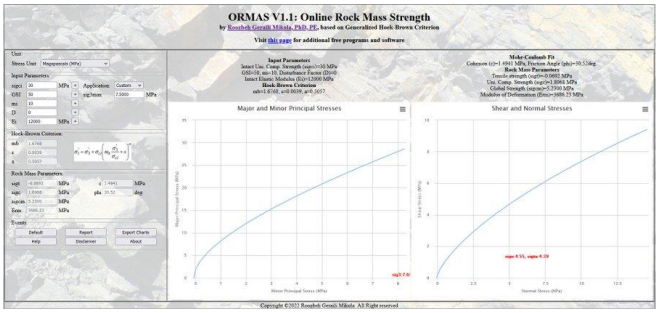
(Geoengineer, Jul, 20, 2023, https://www.geoengineer.org/news/massive-landslip-blocks-seatown-beach-in-dorset-uk)

Dcodes

https://www.dcodes.io

ORMAS - Online Rock Mass Strength

ORMAS is a free software for determining rock mass strength parameters, based on the Generalized Hoek-Brown failure criterion.



ORMAS - Online Rock Mass Strength

ORMAS is a free software for determining rock mass strength parameters, based on the Generalized Hoek-Brown failure criterion. The first version of th...

(https://twitter.com/dcodes_io/status/1685213221873979392, Jul 29, 2023)

ΕΝΔΙΑΦΕΡΟΝΤΑ - ΣΕΙΣΜΟΙ & ΑΝΤΙΣΕΙΣΜΙΚΗ ΜΗΧΑΝΙΚΗ

The precursory phase of large earthquakes

Quentin Bletery and Jean-Mathieu Nocquet

Editor's summary

Unlike some volcanic eruptions, no clear set of precursor signals have been identified for large earthquakes. Bletery and Nocquet analyzed high-rate GPS time series before 90 different earthquakes that were magnitude 7 and above to find a precursor signal (see the Perspective by Bürgmann). They observed a subtle signal that rose from the noise about 2 hours before these major earthquakes occurred. This work may allow fault monitoring for this precursor phase with denser and higher-precision instrumentation. —Brent Grocholski

Abstract

The existence of an observable precursory phase of slip on the fault before large earthquakes has been debated for decades. Although observations preceding several large earthquakes have been proposed as possible indicators of precursory slip, these observations do not directly precede earthquakes, are not seen before most events, and are also commonly observed without being followed by earthquakes. We conducted a global search for short-term precursory slip in GPS data. We summed the displacements measured by 3026 high-rate GPS time series—projected onto the directions expected from precursory slip at the hypocenter—during 48 hours before 90 (moment magnitude ≥7) earthquakes. Our approach reveals a ≈2-hour-long exponential acceleration of slip before the ruptures, suggesting that large earthquakes start with a precursory phase of slip, which improvements in measurement precision and density could more effectively detect and possibly monitor.

Detecting precursors to natural disasters is key for predicting those events and minimizing human and economic losses. The search for earthquake precursors has been a long-standing pursuit, with much hope being placed in the concept of earthquake prediction in the early 1970s (*1*). The potential for earthquake prediction was later seriously reassessed when theoretical studies suggested that earthquakes are nonlinear processes that are highly sensitive to unmeasurably fine details of the physical conditions at depth (*2*, *3*). In the past decade, the idea has grown that large earthquakes initiate with a potentially observable slow aseismic phase of slip on the fault, associated with increased microseismicity (*4*–*18*). On the basis of either geodetic or seismic data, these studies suggest that earthquake precursors exist and that therefore earthquakes could be anticipated minutes (*4*), days (*5*, *7*, *15*, *18*), weeks (*6*), months (*7*–*12*), or even years (*13*) before they occur.

Nevertheless, all these analyses are based on records preceding only a few earthquakes, strongly limiting the generalization of the observation. Moreover, slow aseismic slip events associated with increased microseismicity are routinely observed and most of the time do not precede a large earthquake (*19*–*24*), which further calls into question the causal relationship between these proposed precursory signals and the earthquakes. Another critical point is that these observations on natural faults do not show a continuous process culminating in the earthquake. Indeed, whether the observations come from geodetic or seismic data, they show evidence of a slow slip or a microseismic crisis that usually stops days or weeks before the catastrophic event (*4*–*6*, *8*–*18*). None of these observations show an exponential buildup of the aseismic slip leading to the rupture, which is expected from laboratory experiments (*25*–*28*) and numerical models (*29*–*31*). One exception is a global analysis of the seismicity preceding large earthquakes, which does find an exponential increase in the number of earthquakes ranging from years up to hours preceding large events (*7*).

…

Science, Vol 381, Issue 6655, pp. 297-301, 20 Jul 2023, DOI: 10.1126/science.adg2565

(Science, 20 Jul 2023, https://www.science.org/doi/10.1126/science.adg2565)

Predicting earthquakes is currently impossible. GPS data could help change that

GPS data can track slight tremors underground that could help predict earthquakes two hours in advance

In February 2023, a devastating earthquake hit southern and central Turkey and northern and western Syria. (Image credit: Photo by OZAN KOSE/AFP via Getty Images)

Currently, it is impossible to accurately predict when and where an earthquake might strike. But scientists now believe that Global Positioning System (GPS) data could help spot early warning signs two hours before a big quake strikes.

Earthquakes occur when the slabs of slow-moving rocks just under Earth's surface — known as tectonic plates — suddenly slide past one another. This releases a wave of energy that triggers shaking on the surface, which can vary from tiny rumbles to massive quakes. For decades, scientists have tried to find a pattern that precedes major earthquakes so that people have time to prepare, but so far these efforts have come up short.

However, GPS satellites may be able to help researchers identify a precursor for powerful earthquakes two hours before they occur by tracking small "slips" in the tectonic plates

as they grind against each other, researchers wrote in a new study, published July 20 in the journal Geophysics.

But some experts disagree that the findings could help scientists predict earthquakes moving forward.

The researchers analyzed GPS data from more than 90 earthquakes with magnitudes greater than 7, which was pulled from Nevada Geodetic Laboratory, a University of Nevada, Reno research lab that catalogs global GPS data. GPS satellites are able to detect ground movement by measuring the position of sensors embedded around the Earth and recording how much they are displaced over time.

The scientists tracked how ground movements shifted in the 48 hours leading up to each event, specifically zeroing in on the amount and direction of shaking. They discovered that two hours before the earthquakes ruptured, horizontal ground movement accelerated exponentially in a pattern consistent with something called a "slow fault slip," which is when the ground moves without producing any seismic waves or tremors.

Then the researchers repeated this analysis on 100,000 random 48-hour time windows that did not occur before an earthquake to act as a control group, and saw a similar pattern in just 0.03% of samples. This supports the idea that the "slow fault slip" pattern occurs only before earthquakes the vast majority of the time.

Identifying this pattern of subtle movements could help scientists warn people of earthquakes hours in advance — but only if we develop more advanced GPS systems, study co-author Quentin Bletery noted. The new study required a massive dataset — pulled from more than 3,000 sensors around the world — to reveal the pattern preceding the earthquake. But identifying the slow fault slip pattern at an individual location would require sensors that are at least 100 times more sensitive than existing technology, Bletery told Scientific American.

Scientists are currently unable to predict earthquakes. (Image credit: Photo by OZAN KOSE/AFP via Getty Images)

"We can't detect at the scale of one earthquake, so we cannot make predictions," Bletery, a geophysicist at Côte d'Azur University in France, told New Scientist. "But it tells us there's something going on, and if we make significant progress in measurement — either the sensor itself, improving its sensitivity, or by just having more of them — we could be able to perceive things and make predictions."

Currently, however, the findings from the new study likely cannot be applied to predicting earthquakes, said John Rundle, a professor in the Department of Physics and Geology at the University of California, Davis who was not involved in the study.

"While the conclusions may support the hypothesis that there *may* be a slow slip physical process that [precedes] large earthquakes, I think it would be a mistake to think that this could be used as some type of earthquake prediction observation," he told Live Science in an email. "The authors have access to substantial information that would not normally be available to an observer *in advance* of the occurrence of the earthquake. Namely, the time, location and direction of sliding."

There are already a few early warning systems — such as ShakeAlert, an app built by the U.S. Geological Survey and several universities — that warn people of earthquakes a few seconds before they occur. If the patterns observed in this study can be confirmed and better tracked, the data "could possibly be integrated into automated earthquake early-warning systems," Roland Bürgmann, a professor in the Department of Earth and Planetary Science at University of California, Berkeley, who was not involved in the research, wrote in an accompanying perspective piece for Science.

This precursor warning could eventually give people "time to let go of sharp utensils and get ready to "Drop, Cover, and Hold On," before the Big One strikes," he added.

(Kiley Price / LIVESCIENCE, 29/07/2023, https://www.livescience.com/planet-earth/earthquakes/predicting-earthquakes-is-currently-impossible-gps-data-could-help-change-that)

ΕΝΔΙΑΦΕΡΟΝΤΑ - ΠΕΡΙΒΑΛΛΟΝ

Ρωσία: Ο μεγαλύτερος κρατήρας μόνιμου πάγου στον κόσμο ξεπαγώνει λόγω της υπερθέρμανσης του πλανήτη

Ο κρατήρας Μπαταγκάικα, μια σχισμή μήκους ενός χιλιομέτρου στην Άπω Ανατολή της Ρωσίας είναι γνωστός και ως «η πύλη στον κάτω κόσμο».

Φωτογραφία του κρατήρα Batagaika, καθώς το μόνιμο παγωμένο έδαφος, γνωστό και ως πέρμαφροστ ξεπαγώνει προκαλώντας μια τεράστια καθίζηση στο διαβρωμένο τοπίο, στη Δημοκρατία Σάκχα της Ρωσίας, από βίντεο που τραβήχτηκε από drone στις 11 ή 12 Ιουλίου 2023. Reuters TV μέσω REUTERS

Εντυπωσιακά πλάνα από drone αποκάλυψαν λεπτομέρειες του κρατήρα Μπαταγκάικα, μιας σχισμής μήκους ενός χιλιομέτρου στην Άπω Ανατολή της Ρωσίας, που αποτελεί τον μεγαλύτερο κρατήρα μόνιμης **παγοκάλυψης** στον κόσμο.

Στο βίντεο δύο εξερευνητές σκαρφαλώνουν σε ανώμαλο έδαφος στη βάση του βυθίσματος, το οποίο χαρακτηρίζεται από ακανόνιστες επιφάνειες και μικρά υψώματα, τα οποία άρχισαν να σχηματίζονται μετά την αποψίλωση του γύρω δάσους τη δεκαετία του 1960 και το λιώσιμο του υπόγειου μόνιμου **πάγου**, που είχε ως αποτέλεσμα να βυθιστεί η γη.

«Εμείς οι ντόπιοι τον αποκαλούμε "η κατάρρευση"», δήλωσε στο Reuters ο κάτοικος της περιοχής και εξερευνητής του κρατήρα Ερελ Στρουτσκόφ καθώς στεκόταν στο χείλος του κρατήρα. "Αναπτύχθηκε τη δεκαετία του 1970, αρχικά ως χαράδρα. Στη συνέχεια, με την απόψυξη από τη ζέστη των ηλιόλουστων ημερών, άρχισε να επεκτείνεται».

REUTERS TV via Reuters

Οι επιστήμονες λένε ότι η Ρωσία θερμαίνεται τουλάχιστον 2,5 φορές ταχύτερα από τον υπόλοιπο κόσμο, με συνέπεια να λιώνει η επί μακρόν παγωμένη **τούνδρα** που καλύπτει περίπου το 65% της χερσαίας έκτασης της χώρας και την απελευθέρωση αερίων του θερμοκηπίου που είναι αποθηκευμένα στο αποψυγμένο έδαφος.

Η "πύλη προς τον κάτω κόσμο", όπως την αποκαλούν επίσης ορισμένοι ντόπιοι στη Δημοκρατία Σαχά της Ρωσίας, έχει και επιστημονική ονομασία: μεγα-καθίζηση.

REUTERS TV via Reuters

Μολονότι προσελκύει αρκετούς **τουρίστες**, η επέκταση της κατάρρευσης είναι "σημάδι κινδύνου", δήλωσε ο Νικίτα Τανανάγιεφ, επικεφαλής ερευνητής στο Ινστιτούτο Μελνίκοφ Πέρμαφροστ στην πόλη Γιακούτσκ.

"Στο μέλλον, με την αύξηση των θερμοκρασιών και με την υψηλότερη ανθρωπογενή πίεση, θα βλέπουμε όλο και περισσότερες από αυτές τις μέγα-καθιζήσεις να σχηματίζονται, μέχρι να εξαφανιστεί όλος ο μόνιμος πάγος", δήλωσε ο Τανανάγιεφ στο Reuters.

REUTERS TV via Reuters

Η απόψυξη του μόνιμου πάγου έχει ήδη απειλήσει πόλεις και κωμοπόλεις σε όλη τη βόρεια και βορειοανατολική Ρωσία, προκαλώντας ζημιές σε δρόμους, διαλύοντας σπίτια και διακόπτοντας αγωγούς. Τεράστιες πυρκαγιές, οι οποίες έχουν γίνει πιο έντονες τις τελευταίες εποχές, επιδεινώνουν το πρόβλημα.

Οι ντόπιοι στην Σαχά έχουν λάβει υπόψη τους την ταχεία ανάπτυξη του κρατήρα.

"(Πριν από δύο χρόνια η άκρη) ήταν περίπου 20-30 μέτρα μακριά από αυτό το μονοπάτι. Και τώρα, προφανώς, είναι πολύ πιο κοντά", δήλωσε ο Στρουτσκόφ.

Οι επιστήμονες δεν είναι σίγουροι για τον ακριβή ρυθμό με τον οποίο επεκτείνεται ο κρατήρας Μπαταγκάικα. Όμως ο Τανανάγιεφ λέει ότι το έδαφος κάτω από την κατάρρευση, το

οποίο έχει βάθος περίπου 100 μέτρων σε ορισμένες περιοχές, περιέχει μια ”τεράστια ποσότητα” **οργανικού άνθρακα** που θα απελευθερωθεί στην ατμόσφαιρα καθώς το μόνιμο στρώμα πάγου ξεπαγώνει, τροφοδοτώντας περαιτέρω την αύξηση της θερμοκρασίας του πλανήτη.

REUTERS TV via Reuters

”Με την αύξηση της θερμοκρασίας του αέρα μπορούμε να περιμένουμε ότι (ο κρατήρας) θα επεκτείνεται με μεγαλύτερο ρυθμό”, δήλωσε. ”Αυτό θα οδηγήσει σε όλο και μεγαλύτερη αύξηση της θερμοκρασίας του κλίματος τα επόμενα χρόνια”.

A person walks at the Batagaika crater, as permafrost thaws causing a megaslump in the eroding landscape, in Russia's Sakha Republic in this still image from video taken July 11 or 12, 2023. Reuters TV via REUTERS

(Lucy Papachristou / REUTERS, 22/07/2023, https://www.huffingtonpost.gr/entry/rosia-o-meyaleteros-krateras-monimoe-payoe-ston-kosmo-xepayonei-loyo-tes-eperthermanses-toe-planete_gr_64bad022e4b09a929692f9f6)

ΝΕΕΣ ΕΚΔΟΣΕΙΣ ΣΤΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΠΙΣΤΗΜΕΣ

NZ Ground Investigation Specification

There has not previously been a standard template in New Zealand for the specification and procurement of ground investigation work, and specifications varied significantly from project to project and between organisations. Long project specific specifications were unlikely to be fully read by tenderers (at least within the tender period) while short specifications were unlikely to capture all the appropriate details. This has resulted in a number of problems:

1. Time was wasted writing a fresh specification for each project, adding to costs.

2. There was inconsistent pricing within and between tenders due to the lack of clarity on scope.

3. Inconsistent or unread specifications resulted in confusion about the scope of work, including expectations and practices about the quality standards required, leading to unexpected variations or rework on site.

This specification is the fruit of a collaborative process involving major clients, large and small consultants and contractors. It a free to use, ready-to-go document pack which is suitable for small, medium and large projects of any complexity. It is designed to be easy to use, to simplify the procurement process, and to be customisable to suit the requirements for more complex projects.

The full specification comprises a number of inter-related components that, when used together, provide best opportunity to achieve a quality ground investigation and a simpler, clearer and more consistent tendering process for all parties.

https://www.nzgs.org/libraries/nz-ground-investigation-specification/
NZ-Ground-Investigation-Specification-Vol-0-3.pdf
NZ-Ground-Investigation-Specification-Vol-1-3.pdf
NZ-Ground-Investigation-Specification-Vol-2-rev-0-3.docx
NZ-Ground-Investigation-Specification-Vol-3-rev-1-3.xlsx

(NZGS, 2022)

ΗΛΕΚΤΡΟΝΙΚΑ ΠΕΡΙΟΔΙΚΑ

https://www.nxtbook.com/dfi/DEEP-FOUNDATIONS/may-june-2023/index.php#/p/Intro

https://www.nxtbook.com/dfi/DEEP-FOUNDATIONS/july-august-2023/index.php#/p/Intro

IGS NEWSLETTER – July 2023

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

Helping the world understand the appropriate value and use of geosynthetics

www.geosyntheticssociety.org/newsletters

- IGS Strategy Goal Series – Improving *Representation* In The IGS READ MORE
- Crucial I-95 US Road Link Fixed In Weeks Thanks To Geosynthetics READ MORE
- Finalists Announced For 12th ICG Young Paper Award Contest READ MORE
- IGS Establishes Diversity Task Force READ MORE
- Did You Know?… Geosynthetics Remove Microplastics From Treated Water READ MORE
- Championing Greener Choices With Geosynthetics At Morocco Conference READ MORE
- Calendar of Events

Deep Foundations Institute

Κυκλοφόρησαν τα Τεύχη Μαΐου-Ιουνίου και Ιουλίου-Αυγούστου 2023 του περιοδικού Deep Foundations του Deep Foundations Institute με εξαιρετικό περιεχόμενο:

ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ ΕΕΕΕΓΜ (2019 – 2023)

Πρόεδρος	:	Μιχάλης ΜΠΑΡΔΑΝΗΣ, Δρ. Πολιτικός Μηχανικός, ΕΔΑΦΟΣ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Α.Ε. mbardanis@edafos.gr, lab@edafos.gr
Α' Αντιπρόεδρος	:	Χρήστος ΤΣΑΤΣΑΝΙΦΟΣ, Δρ. Πολιτικός Μηχανικός, ΠΑΝΓΑΙΑ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Ε.Π.Ε. editor@hssmge.gr, ctsatsanifos@pangaea.gr
Β' Αντιπρόεδρος	:	Μιχάλης ΠΑΧΑΚΗΣ, Πολιτικός Μηχανικός mpax46@otenet.gr
Γενικός Γραμματέας	:	Γιώργος ΜΠΕΛΟΚΑΣ, Δρ. Πολιτικός Μηχανικός, Επίκουρος Καθηγητής ΤΕΙ Αθήνας gbelokas@teiath.gr, gbelokas@gmail.com
Ταμίας	:	Γιώργος ΝΤΟΥΛΗΣ, Πολιτικός Μηχανικός, ΕΔΑΦΟΜΗΧΑΝΙΚΗ Α.Ε.- ΓΕΩΤΕΧΝΙΚΕΣ ΜΕΛΕΤΕΣ Α.Ε. gdoulis@edafomichaniki.gr
Έφορος	:	Γεώργιος ΓΚΑΖΕΤΑΣ, Δρ. Πολιτικός Μηχανικός, Ομότιμος Καθηγητής Ε.Μ.Π. gazetas@central.ntua.gr, gazetas50@gmail.com
Μέλη	:	Ανδρέας ΑΝΑΓΝΩΣΤΟΠΟΥΛΟΣ, Δρ. Πολιτικός Μηχανικός, Ομότιμος Καθηγητής ΕΜΠ aanagn@central.ntua.gr
		Παναγιώτης ΒΕΤΤΑΣ, Πολιτικός Μηχανικός, ΟΜΙΛΟΣ ΤΕΧΝΙΚΩΝ ΜΕΛΕΤΩΝ Α.Ε. otmate@otenet.gr
		Μαρίνα ΠΑΝΤΑΖΙΔΟΥ, Δρ. Πολιτικός Μηχανικός, Αναπληρώτρια Καθηγήτρια Ε.Μ.Π. mpanta@central.ntua.gr
Αναπληρωματικά Μέλη	:	Χρήστος ΣΤΡΑΤΑΚΟΣ, Πολιτικός Μηχανικός, ΝΑΜΑ Α.Ε. stratakos@namalab.gr
		Βάλια ΞΕΝΑΚΗ, Δρ. Πολιτικός Μηχανικός, ΕΔΑΦΟΜΗΧΑΝΙΚΗ Α.Ε. vxenaki@edafomichaniki.gr
Εκδότης	:	Χρήστος ΤΣΑΤΣΑΝΙΦΟΣ, Δρ. Πολιτικός Μηχανικός, ΠΑΝΓΑΙΑ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Ε.Π.Ε. editor@hssmge.gr, ctsatsanifos@pangaea.gr

ΕΕΕΕΓΜ

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

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

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

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