ΕΛΛΗΝΙΚΗ ΕΠΙΤΡΟΠΗ ΤΕΧΝΙΚΗΣ ΓΕΩΛΟΓΙΑΣ
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ΠΡΟΣΚΛΗΣΗ

Η Ελληνική Επιτροπή Τεχνικής Γεωλογίας έχει την τιμή να σας καλέσει στην διάλεξη που θα πραγματοποιηθεί από τον

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RMC /University of Canada

με θέμα
"Sensing the Ground: The use of Distributed Optical (Fiber) Sensors for Monitoring the Ground as well as for Support in Underground Excavations "

την **Τετάρτη 6/3/2019 και ώρα 18:00**, στην κεντρική αίθουσα τελετών του ΕΜΠ (Πολυτεχνειούπολη Ζωγράφου).

Για την ΕΕΤΓ
Κων/νος Λουπασάκης
Αναπλ. Καθηγητής ΕΜΠ
Πρόεδρος της ΕΕΤΓ

Περίληψη / Abstract

In this presentation, a distributed optical strain-sensing technique is presented as a solution for measuring the strain distribution along ground support members used in tunnelling and mining works. The technique employs a Rayleigh optical frequency domain reflectometry technology, which measures strain at a spatial resolution of 0.65 mm along the length of a standard optical fiber. The development of a technique to couple optical fiber sensors with rock bolt, umbrella arch, and cable bolt support members demonstrated. A robust laboratory investigation of such optically instrumented support members demonstrated the capability of the technique to capture the expected in situ support behaviour in the form of coaxial, lateral, and shear loading arrangements as would be anticipated in the field. Moreover, the microscale data obtained by this optical sensing technique are shown to provide unprecedented insight into the local/micro-scale geomechanistic complexities associated with the bearing capacity of ground support members, especially when compared with data obtained by discrete strain-sensing technologies. The technique can be employed in order to sense the ground ahead of the excavated face as well as optimize the support scheme associated with underground works.