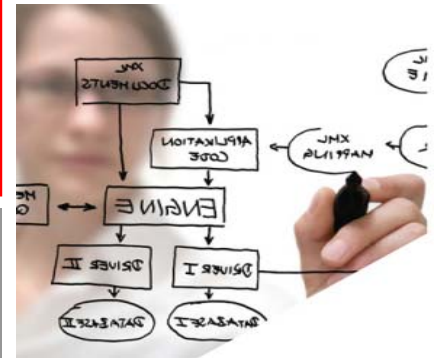




**Australian Geomechanics Society**

*Sydney Chapter*

Venue: New Law School Theatre 106, University of Sydney



**TECHNICAL PRESENTATION**

Monday 30 August 2010

Light refreshments at 5.30 PM prior to 6.00 PM meeting

# Rock Mass Characterization: a vehicle to translate geology into the design of engineering structures

**Speaker: Dr Paul Marinos**

The 2010 Jahns Distinguished Lecturer

## SYNOPSIS

The integration of site geology with engineering requirements is the basis of Engineering Geology. Despite the record of case histories and the development of field and laboratory investigation techniques, there continues to be a need to describe site geology in terms appropriate for the analyses of deformation and stability of ground in situ. Two developments hold the potential to improve such description: the characterization of soil and rock, and the wider use of numerical modeling. Methods of characterization can now be tested with the aid of numerical analyses, and the suitability of the predictions they lead to can be tested with site instrumentation.

Since the attempt by Terzaghi in 1946 to describe the characteristics of rock masses, numerous rock mass classifications have been developed. Hoek and Brown (1980) set out to develop a failure criterion and a classification system, the Geological Strength Index (GSI), specifically for the purpose of designing tunnels, slopes or foundations in rocks. Here the geological character of rock material, together with a visual assessment of the mass that forms, are used as a direct input for the selection of parameters relevant for the prediction of rock mass strength and deformability. GSI has considerable potential for use in rock engineering because it permits the manifold aspects of rock to be quantified, enhancing geological logic and reducing engineering uncertainty.

A detailed description of GSI is presented with suggestions for its use and discussion on its limitations. A number of examples from designs of engineering structures conclude the presentation.

*Attendance may be credited (1 point) towards Continuing Professional Development requirements. Members are responsible for recording CPD for audit purposes.*

Booking is not required.

For further information contact Mark Adams ([mark.adams@arup.com.au](mailto:mark.adams@arup.com.au))



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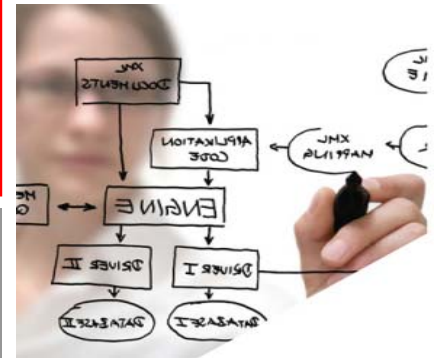


# Australian Geomechanics Society

## Sydney Chapter

### TECHNICAL PRESENTATION

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## BIOGRAPHY

Dr Paul Marinos has been named the 2010 Jahns Distinguished Lecturer. He received a Mining Engineering degree from the School of Mines of the National Technical University of Athens, Greece in 1966, a postgraduate degree in Applied Geology from the University of Grenoble, France, and his Doctorate in Engineering Geology from the same University in 1969.

He worked for French and Greek design and construction companies until 1977 and then was elected as Professor at Democritus University in Northern Greece. Since 1988 Dr Marinos has been Professor of Engineering Geology in the School of Civil Engineering in the National Technical University of Athens and has served as head of the Geotechnical Section of the School for several years. From 2001 to 2004 and from 2006 to 2008 he was the Director of a Graduate Course in Tunneling and Underground Construction. He was a visiting Professor in the Geology Department of the University of Grenoble (1987) and of the School of Mines in Paris (2003).

Dr Marinos is a member of AEG and GSA and fellow of the Geological Society of London. He is a past President of the International Association of Engineering Geology and the Environment (IAEG), immediate past president of the Geological Society of Greece and honorary member of the International Association of Hydrogeologists (IAH).

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For further information contact Mark Adams ([mark.adams@arup.com.au](mailto:mark.adams@arup.com.au))



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