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Chapter  
NSW Branch

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Tuesday 8 April 2014  
5:30 pm to 8 pm

**Parsons Brinckerhoff offices**

Ernst & Young Centre  
Level 26, 680 George Street, Sydney CBD

**\*\*For late arrivals, please phone Rob Leslie on 0410 486 208 for access\*\***

*IAH NSW proudly presents a talk by **Dr Mahdi Zoorabadi**, a researcher at the University of New South Wales*

**'Hydraulic conductivity of jointed rocks: New estimation approach and new insights into the field tests'**

Rock discontinuities play a significant role in the circulation of water through jointed rocks, while the geometrical characteristics of joints control the magnitude and orientation of the hydraulic conductivity tensor.

This presentation includes a new approach to estimate the hydraulic conductivity of jointed rocks on the basis of the geometrical properties of rock discontinuities. This framework provides the capability to estimate the 3D tensor of hydraulic conductivity and assess the variation average hydraulic conductivity with depth.

Furthermore, field tests as more trustworthy tools to estimate the hydraulic conductivity are discussed in this presentation. Although the single-hole tests such as packer tests (Lugeon test) and slug tests are common practice, they are not capable to measure the anisotropic hydraulic conductivity of jointed rocks. Furthermore, the effected volume of jointed rocks in these tests is not representative of real conditions in most cases.

The effects of nonlinear flow conditions on the results of packer tests will also be discussed in this presentation. The interference test (cross-hole conductivity test or multi-well test) covers a larger volume of jointed rocks and provides the required data to calculate the 3D tensor of hydraulic conductivity. In this presentation a combination of analytical methods and 3D numerical modelling (FLAC 3D) was used to interpret the results of interference tests.

**Please RSVP to:**

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