Organised by Geotechnical Engineering Technical Division (GETD)

Technical Talk on

Infrastructure Instability and Ground Movement Monitoring with Satellite InSAR

Mr. Alastair Belson

BEM APPROVED CPD: 2
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3.00PM - 5.00PM

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Online Registration Fees
IEM Members : RM 15.00
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SYNOPSIS

Satellite radar imagery has been acquiring over Malaysia for many years. By processing such imagery with an advanced 'Interferometric Synthetic Aperture Radar' (InSAR) processing chain, it is possible to map current and past ground displacements to millimetre accuracy. In a typical InSAR analysis, millions of synthetic ground measurement points can be typically detected, each of which has an accompanying time-series of recent ground movement behaviour, indicating areas of stability, instability, displacement magnitude, velocity and acceleration. Such maps, updated on a regular basis, provide a wide-area and detailed understanding of slope instabilities and long-term ground settlement / movement. InSAR offers an accurate, cost-effective and repeatable mapping solution for slope and ground instability mapping, as well as long-term monitoring of infrastructure. Furthermore, the technique is complimentary with in-situ observations and is completely remote, meaning no need for ground instrumentation or equipment maintenance. The discussion will cover an introduction to InSAR, where InSAR fits in with traditional monitoring and applications and case studies for civil engineering & slope monitoring.

SPEAKER'S PROFILE

Mr. Alastair Belson is the SE Asia Area Business Manager of TRE Altamira (Italy) and is the director of Global Remote Sensing. He holds a Bachelor's degree in Geophysics BSc and a Masters MRES degree in Volcanology and Atmospheric sciences. Alastair is a remote sensing specialist with experience ranging from geophysical surveying & satellite data analysis to innovative project design, reporting and international business development. Alastair has 17 years of professional experience in the fields of geophysical ground surveying and satellite monitoring, including Interferometric Synthetic Aperture Radar (InSAR) for ground and infrastructure instability monitoring and additional satellite monitoring solution for environmental applications.