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WEBINAR TALK ON

THE SIGNIFICANCE OF SIGMOID CURVES IN GEOPHYSICS' (IN SOIL MECHANICS AND CLIMATE CHANGE)

SPEAKER:
DR COLIN ABBISS

23 JUNE 2026
TUESDAY

4.00PM - 6.00PM

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BEM Approved CPD: 2
Ref. No.: IEM26/HQ/219/T(w)

Registration Fees:
Student Members : Free
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SYNOPSIS

The lecture introduces the concept and key features of sigmoid curves, which appear in many natural processes and behavioural patterns. It shows how these S-shaped curves can be used to analyse geophysical trends, ranging from soil mechanics to the global climate crisis. In soil mechanics, sigmoid curves describe soil damping linked to modulus reduction, deformation, and load transfer, with results that closely match experimental data. Similar patterns are also evident in population growth and environmental indicators such as CO2 concentrations and global temperatures, both of which suggest dangerous exponential growth. To prevent catastrophic warming above 3 degrees Celsius, the sources argue that reaching net zero alone is insufficient. Beyond conventional methods of reducing carbon emissions in construction practices, the author proposes a carbon-negative approach based on low-temperature engineering to capture and remove atmospheric carbon. This approach highlights the potential of liquid air batteries, high-efficiency heat exchangers, and specialised rotary engines to help reverse the damage caused by industrial combustion.

SPEAKER'S PROFILE

Dr. Colin Abbiss worked at the Building Research Establishment for 25 years where geophysical methods were being applied to foundation problems such as the North Sea drilling rigs and to dams and tunnels. Finding that surprising accuracies were possible, they had to be matched by a corresponding precision of measurement, often using optics. He was a visiting lecturer at the National University of Malaysia and is encouraged to find that these methods are now being applied widely in East Asia. He is also a Senior Visiting Fellow at The City University, London, where very appropriately the research was into London Clay! With wife Janet is a Life Member of the pioneer Centre for Alternative Technology at Machynlleth in Wales. Both are Friends of the Faraday Institute for Science and Faith, and the Tyndale House Centre, at Cambridge University.
Worked with A Rocha, the international Christian environmental organisation, and their Christian Rural and Environmental Studies programme. More recently has been involved with the Epicam project to clean up our environment, using power from liquid air and in the process removing carbon compounds from the atmosphere. The aim is to get back to balanced pre-industrial conditions. Hobbies are model engineering and exploring our world, often on foot!