



University of Cyprus

Department of Civil and  
Environmental Engineering

## INVITATION | THE ENGINEER IN SOCIETY

**24 NOVEMBER 2022**

**16:30 – 17:30 | UNIVERSITY OF CYPRUS | ROOM LRC014, LIBRARY BUILDING**

**An overview of the Beam-Truss Model (BTM) method for analysing reinforced concrete structures**

**SPEAKER: Lecturer Marios Mavros, Department of Civil and Environmental Engineering , University of Cyprus**

### ABOUT THE TALK:

The BTM is an accurate, simple, and computationally efficient analysis method for reinforced concrete (RC) walls, and other components, as well as for entire building and structural systems. The BTM has been extensively validated using the experimental test results of RC structural walls of various section shapes and configurations; rectangular (R), barbell (B), flanged of various sectional shapes (T, I, C, H), and coupled walls via coupling beams and/or slabs. Recently, our team of researchers submitted a blind prediction for a competition which won the first place for accurately predicting the behaviour of two U-shape RC walls subjected to bending and torsional loadings, using the BTM methodology. The presentation will give an overview of the BTM method, show several validation examples, and the blind prediction competition results. Finally, a case study on the analysis of a 14-story RC core wall building will be presented.

### SHORT BIO:

Marios Mavros holds a Diploma in Civil Engineering from National Technical University of Athens and he received his Master's and his Ph.D in Structural Engineering from the University of California, San Diego. In his thesis, he investigated the seismic performance of reinforced masonry structures using numerical models and full- scale shake-table tests. His research focuses on subjects related to earthquake engineering, finite elements, and material constitutive modelling. Currently he is a Lecturer at the department of Civil and Environmental Engineering at the University of Cyprus. Prior to the lecturer appointment, he was project consultant in the structural engineering firm Simpson Gumpertz & Heger. During his career in industry, he worked on numerous projects including failure investigations, structural evaluation, product development and optimization.