

# Computational Modeling of Masonry Structures Using the Discrete Element Method

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## Description:

The Discrete Element Method (DEM) has emerged as a solution to predicting load capacities of masonry structures. As one of many numerical methods and computational solutions being applied to evaluate masonry structures, further research on DEM tools and methodologies is essential for further advancement.

**Computational Modeling of Masonry Structures Using the Discrete Element Method** explores the latest digital solutions for the analysis and modeling of brick, stone, concrete, granite, limestone, and glass block structures. Focuses on critical research on mathematical and computational methods for masonry analysis.

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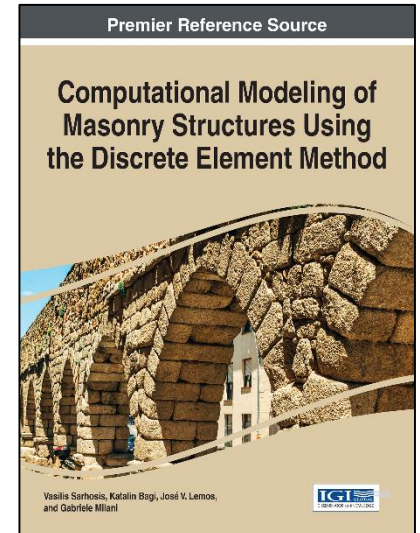
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Vasilis Sarhosis completed his Undergraduate and Master's degree in Civil and Structural Engineering at the University of Leeds in 2005. He then spent time working in the industry as a graduate Civil Engineer in two of the largest consult engineering companies in UK, MWH Global and Gronmij. In 2007, he returned to Leeds to study for a PhD in Computational Modelling of Materials and Structures where he developed a tool that can be used to improve understanding of the in-service and near collapse behaviour of low bond strength masonry and compare and evaluate alternative methods of rehabilitation, repair or strengthening of masonry structures. He is currently a Lecturer in Civil Engineering at Newcastle University.

Katalin Bagi, Doctor of Science, Dr. Habil, is a professor of Structural Mechanics at TU Budapest. She has been dealing with discrete element modelling since the late 1980ies. Until 2006 she studied granular micromechanics as a researcher of the Hungarian Academy of Sciences. In 2007 she went to a teaching position at TU Budapest, and since then her main field of research is the mechanical analysis of masonry vaults. She is married since 1993, they have two daughters

José V. Lemos is a Civil Engineer from the University of Porto, Portugal. PhD from the University of Minnesota, Minneapolis, MN, USA. Presently, he is Principal Research Officer at LNEC, Portugal.

Gabriele Milani has been Associate Professor at POLIMI since 2014, previously Assistant Professor (2009-2013) and Post Doctoral Researcher at ETHZ CH (2008). His research focuses on masonry modeling and safety assessment of historic masonry in seismic area. He works on FEM limit analysis, rubber vulcanization (with Pirelli) and seismic isolation. He has been awarded with a Telford Premium (2012) by ICE and a Bathe award in 2014 as the best young researcher on FEs in 2014. He has co-authored 104 ISI papers, he is the 2nd author in Scopus under the keyword "masonry". He is EIC of a Journal dedicated to masonry (International Journal of Masonry Research and Innovation) and co-editor of a Scopus journal generalist for civil engineering. He will chair the International Masonry Conference (2018).

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