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EXPERT SYSTEM FOR SEISMIC VULNERABILITY ASSESSMENT OF MASONRY STRUCTURES

S U M M A R Y

Possible method for seismic vulnerability assessment of masonry structures with special attention to low-rise residential structures in Macedonia is proposed in this paper. For this purpose, special calculation tool which contains specific knowledge for masonry structures derived by numerical calculations and analyses is developed. The aim of this assessment tool is to be simple for application even for personnel with slight or no experience in behaviour of masonry structures under seismic action, so it could be developed as a serious system for fast and precise assessment of the condition of many structures in a wide region. In this paper, a numerical model for calculation of the bearing capacity of the structure based on the discrete element method is suggested, so that it is first application of this relatively new numerical technique for calculation of masonry in Macedonia. A method for creation of the knowledge base for an Expert System suggested by the given methodology is presented. Also, results from the application of this methodology are applied on a real structure.

Keywords: expert system, masonry structures, discrete element method, UDEC, micro-modelling.

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