

Analysis of Shear-Dominated Reinforced Masonry Walls Using Truss Models

Mohammadreza Moharrami¹, Ioannis Koutromanos² and Scott A. Williams³

Abstract:

This study uses nonlinear truss models for the analysis of fully grouted, shear-dominated, reinforced masonry (RM) walls subjected to cyclic lateral loads. A previously established method, developed for the analysis of reinforced concrete walls, is appropriately modified to allow the simulation of RM walls, including walls with openings. The modeling approach is validated using data from previously conducted quasi-static tests on single-story walls and a dynamic test on a two-story wall system. The very good agreement of the analytical results with the experimental observations and the conceptual simplicity of the modeling approach indicate that it can be used for parametric analyses of RM wall systems.

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¹ Graduate Student, Dept. of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, mrmg@vt.edu

² TMS Member, Ph.D., Assistant Professor, Dept. of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, ikoutrom@vt.edu

³ Engineer, Berger ABAM, Federal Way, WA, scott.a.willi@gmail.com