LIMIT PLASTIC ANALYSIS OF A STRUCTURAL CONCRETE BLOCK WALL

Buzar, Márcio Augusto Roma¹; Ritter de Gregorio, Marcos Henrique

¹ PhD, Professor, University of Brasilia, Architecture Department, buzar@unb.br
² M.Sc., Architect, University of Brasilia, Architecture Department, marcos@ritteregregorio.com.br

At this paper, it is searched the maximum collapse load of a structural concrete block wall. Simulations are made considering the removal of resistant material, such as the installation of a door or openings motivated by modifications at the architectural project.

A mathematical programming using the Coulomb and Von Mises criteria is used at the limit plastic analysis assuming the basic hypothesis of associated plasticity. It is used a polyhedral representation of the yielding surface studying the convergence of the results in relation of the chosen number of planes at each representation. It is used the hybrid finite elements formulation.

Numeric examples are shown for the structural concrete block wall case, considering different finite elements meshes and the obtained results are compared with those of the analytical analysis that exists at the criteria adopted by the Brazilian concrete block structure project Standard - NBR 10837.

Keywords: structural concrete block, hybrid finite elements, limit plastic analysis.

Theme: research and testing.
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