



DETERMINATION OF DOMINANT MODE FREQUENCY OF DOUBLE LAYER GRIDS USING OPTIMIZED STARTING ITERATION VECTOR

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Volume: **XII**

No: **1**

Pages: **13-20**

Date: **January 2015**

Abstract:

The vector iteration methods are one of the fundamental equation solving methods among eigenproblem solving methods; however, convergence to a specific mode is difficult in such methods. In this paper, a method is presented for double layer grid structures in which the vector iteration methods converge to the dominant modes. For obtaining the dominant modes, the starting iteration vector is optimized using genetic algorithm based on the mass participation ratio. Subsequently, (in order to obtain the upper dominant modes) the Gram-Schmidt orthogonalization method is used. The numerical results demonstrate the computational advantages of the proposed methodology.

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