

Buckling Analysis of 2D Frames Using the Modified Newmark Method

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Abstract : The main purpose of this paper is to present the Modified Newmark Method of buckling analysis frame considering the effect of the axial load. The discussion will be restricted to plane frameworks containing a constant cross-section for each element. In addition, it is assumed that the frames are prevented from out-of-plane deflection. In this method, stiffness matrix of the structure is considered to be constant. The most important advantage of such a method is that it obtains both upper and lower critical loads. The advanced of the present method is fast convergence, ability to use computer simulations, and ability to model structures with semi-rigid support conditions using linear and rotational spring.

Keywords : buckling, stability, frame, modified newmark method

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