## Investigating Elastica and Post Buckling Behavior Columns Using the Modified Newmark Method

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**Abstract :** The purpose of this article is to analyze the finite displacement of Columns by applying the Modified Newmark Method. This research will be performed on Columns subjected to compressive axial load, therefore the non-linearity of the geometry is also considered. If the considered strut is perfect, the governing differential equation contains a branching point in the solution path. Investigation into the Elastica is a part of generalizing the developed method. It presents the ability of the Modified Newmark Method in treating non-linear differential equations Derived from elastic strut stability problems. These include not only an approximate polynomial solution for the Elastica problems, but can also recognize the branching point and the stable solution. However, this investigation deals with the post-buckling response of elastic and pin ended columns subjected to central or equally eccentric axial loads.

Keywords : columns, structural modeling, structures & structural stability, loads

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