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## Finite element analysis of the buckling critical loads in un-braced steel frames with multiple slenderness ratio configurations

By Nazim Nariman

GRIN Verlag Gmbh Okt 2013, 2013. Taschenbuch. Book Condition: Neu. 210x148x2 mm. This item is printed on demand - Print on Demand Neuware - Research Paper from the year 2013 in the subject Physics - Mechanics, grade: 3.70, University of Weimar, language: English, abstract: In this paper, two types of steel frames, steel frame without side sway permission and another with side sway permission are created in Abaqus with 10 multiple slenderness ratio of the columns by changing the length every time starting from 1 M and ending with 10 M length of the columns, Twenty models of steel frames with single story and single bay were created, the models are with the same 2D dimensions and material properties, the cross section of the steel is (0.5 0.5) M ,and the supports are fixed, two equal forces  $P = 1000 \text{ N}$  are exerted on the frames in the position mentioned in fig 6, a beam section was defined for the frame integrated before analysis with Young modulus of elasticity  $E = 1 \cdot 10^7 \text{ N/M}^2$ , and shear modulus  $G = 3.8 \cdot 10^6 \text{ N/M}^2$  and poisons ratio  $= 0.3$ . A linear perturbation step is created for buckling and 10 eigenvalues are requested for analysis,...



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