

Post-buckling of an elastic column with various rotational end restraints

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Abstract: In this technical note, the post-buckling behavior of a simply supported elastic column with various rotational end conditions of the supports is investigated. The compressive force is applied at the tip of the column. The characteristic equation for solving the critical loads is obtained from the boundary value problem of linear systems. In the post-buckling state, a set of nonlinear differential equations with boundary conditions is established and numerically solved by the shooting method. The interesting features associated with this problem such as the limit load point, snap-through phenomenon and the secondary bifurcation point will be highlighted herein.

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