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Autore	Timoshenko Stephen <1878-1972, >
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for Determining Critical Loads; 2.3 The Use of Beam-column Theory in Calculating Critical Loads; 2.4 Buckling of Frames; 2.5 Buckling of Continuous Beams; 2.6 Buckling of Continuous Beams on Elastic Supports; 2.7 Large Deflections of Buckled Bars (the Elastica); 2.8 The Energy Method; 2.9 Approximate Calculation of Critical Loads by the Energy Method
2.10 Buckling of a Bar on an Elastic Foundation2.11 Buckling of a Bar with Intermediate Compressive Forces; 2.12 Buckling of a Bar under Distributed Axial Loads; 2.13 Buckling of a Bar on an Elastic Foundation under Distributed Axial Loads; 2.14 Buckling of Bars with Changes in Cross Section; 2.15 The Determination of Critical Loads by Successive Approximations; 2.16 Bars with Continuously Varying Cross Section; 2.17 The Effect of Shearing Force on the Critical Load; 2.18 Buckling of Built-up Columns; 2.19 Buckling of Helical Springs; 2.20 Stability of a System of Bars
2.21 The Case of Nonconservative Forces2.22 Stability of Prismatic Bars under Varying Axial Forces; Chapter 3. Inelastic Buckling of Bars; 3.1 Inelastic Bending; 3.2 Inelastic Bending Combined with Axial Load; 3.3 Inelastic Buckling of Bars (Fundamental Case); 3.4 Inelastic Buckling of Bars with Other End Conditions; Chapter 4. Experiments and Design Formulas; 4.1 Column Tests; 4.2 Ideal-column Formulas as a Basis of Column Design; 4.3 Empirical Formulas for Column Design; 4.4 Assumed Inaccuracies as a Basis of Column Design; 4.5 Various End Conditions; 4.6 The Design of Built-up Columns
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6.4 Lateral Buckling of Simply Supported I Beams

Sommario/riassunto

The best available guide to the elastic stability of large structures, this book introduces the principles and theory of structural stability. It was co-authored by the father of modern engineering mechanics, Stephen Timoshenko, and James Gere, who updated the materials and worked closely with Dr. Timoshenko. Relevant to aspects of civil, mechanical, and aerospace engineering, this classic covers the essentials of static and dynamic instabilities.Topics range from theoretical explanations of 2- and 3-D stress and strain to practical applications such as torsion, bending, thermal stress, and wa