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9.5 Tetrahedron Framework9.6 Cantilever Frame with Two Struts; 9.7 Cantilever Frame with One Strut; References; Exercises; Chapter 10 Simply Supported Beams and Cantilevers; 10.1 Introduction; 10.2 Variable Bending Moments; 10.3 Cantilever with End-Load; 10.4 Cantilever with Distributed Loading; 10.5 Simply Supported Beam with Central Load; 10.6 Simply Supported Beam with Uniformly Distributed Load; 10.7 Additional Failure Criteria; References; Exercises; Chapter 11 Optimum Cross-Sections for Beams; 11.1 Introduction; 11.2 Approaching Optimum Sections; 11.3 Generalised Optimum Sections
11.4 Optimum Section, Combined Bending and Shear11.5 Solid, Axisymmetric Sections; 11.6 Fully Optimised Section; 11.7 Fully Optimised Weight; 11.8 Summary; References; Exercises; Chapter 12 Structures under Combined Loading; 12.1 Introduction; 12.2 Combined Bending and Torsion; 12.3 Cranked Cantilever; 12.4 Cranked Strut with End-Load; 12.5 Cranked Bracket with End-Load; 12.6 Portal Frame with Central Load; 12.7 Cantilever with End and Distributed Loading; 12.8 Centrally Propped Cantilever with End-Load; 12.9 End-Propped Cantilever with Distributed Load
12.10 Simply Supported Beam with Central-Concentrated and Distributed Loadings

Sommario/riassunto

In a global climate where engineers are increasingly under pressure to make the most of limited resources, there are huge potential financial and environmental benefits to be gained by designing for minimum weight. With Mechanics of Optimal Structural Design, David Rees brings the original approach of weight optimization to the existing structural design literature, providing a methodology for attaining minimum weight of a range of structures under their working loads. He addresses the current gap in education between formal structural design teaching at undergraduate level and the prac

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