1. Record Nr. UNINA990001356500403321

Autore	Set
Titolo	Set Theory : Annual Boise Extravaganza in Set Theory (BEST) Conference, March 13-15, 1992, April 10-11, 1993, March 25-27, 1994, Boise State University, Boise, Idaho / Tomek Bartoszynski, Marion Scheepers, editors
Pubbl/distr/stampa	Providence : American Mathematical Society, 1996
ISBN	0-8218-0306-9
Descrizione fisica	xii, 184 p. ; 26 cm
Collana	Contemporary mathematics ; 192
Disciplina	511.322
Locazione	MA1
Collocazione	C-1-(192
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9911008938403321

Autore	YANG Dixiong
Titolo	Structural Analysis
Pubbl/distr/stampa	Les Ulis : , : EDP Sciences, , 2023 ©2023
ISBN	9782759831913 2759831914
Edizione	[1st ed.]
Descrizione fisica	1 online resource (440 pages)
Collana	Textbooks for Tomorrow's Scientists Series
Altri autori (Persone)	GUJunfeng YANGLei CHENJingjie HUXiaofei
Soggetti	Technology & Engineering / Structural
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Structural Analysis -- Brief Introduction to the Book -- Preface -- Contents -- Notations -- Introduction -- Research Object and Tasks of Structural Analysis -- Research Object -- Tasks -- Computational Models of Structures -- Simplification of Structural Systems -- Simplification of Members -- Simplification of Joints -- Simplification of the Supports -- Simplification of Material Properties -- Simplification of Loads -- Classification of Member Structures and Loads -- Classification of Member Structures -- Classification of Loads -- A Brief History of the Development of Structural Analysis -- Energy Principles and Energy Methods -- Force Method and Displacement Method -- Matrix Displacement Method and Finite Element Method -- A Brief Introduction to Important Figures in Structural Analysis -- Kinematic Analysis of Plane Member Systems -- Several Concepts of Kinematic Analysis -- Degree of Freedom and Constraint -- Instantaneously Changeable System and Constantly Changeable System -- Instantaneous Hinge -- Basic Construction Rules of Plane Geometrically Unchangeable Systems -- The Rule of Pin-Joined Member System -- The Rule of Two Rigid Discs -- The Rule of Three Rigid Discs -- Computational Degree of Freedom of Plane Member Systems --

Computational Degree of Freedom of Rigid Disc System -- Computational Degree of Freedom of the Hinged System -- Computational Degree of Freedom of the Mixed System -- Geometrical Stability and Static Determinacy of Systems -- Analysis of Statically Determinate Structures -- Single-Span Statically Determinate Beams -- Single-Span Statically Determinate Beams and Internal Forces -- Relations Between Loads and Internal Forces -- Method of Segmental Superposition -- Multi-Span Statically Determinate Beams -- Statically Determinate Plane Trusses -- Characteristics and Classification of Trusses.
Method of Joints -- Method of Sections -- Combined Application of the Method of Joints and the Method of Sections -- Statically Determinate Plane Frames -- Characteristics of Frames -- Calculation of Support Reactions -- Internal Force Analysis and Drawing Internal Force Diagram of Frames -- Quick Drawing of Moment Diagrams of Statically Determinate Frames -- Statically Determine Composite Structures -- Three-Hinged Arches -- Support Reactions and Internal Force Calculation of Three-Hinged Arches -- Rational Axes of Three-Hinged Arches -- General Properties of Statically Determinate Structures -- Principle of Virtual Work and Deflection Calculation -- Overview of Deflection Calculation -- Concept of Structural Displacements -- Purpose of Deflection Calculation -- Principle of Virtual Work for Deformable Structures -- Principle of Virtual Work for Rigid Body System -- Application Conditions of Principle of Virtual Work for Deformable Structures -- Virtual Work Equation for Deformable Structures -- Principle of Virtual Forces and Principle of Virtual Displacements -- Unit-Load Method for Structural Deflection Calculation -- Deflection Calculation under Loads -- Formula for Deflection Calculation under Loads -- Deflection Formulas for Various Structures -- Examples of Deflection Calculation under Loads -- Graph Multiplication Method -- Graph Multiplication Method and Its Application Conditions -- Several Specific Problems of Applying Graph Multiplication Method -- Examples of Graph Multiplication Method -- Deflection Calculation under Temperature Change -- Reciprocal Theorems of Linearly Elastic Structures -- Theorem of Reciprocal Works -- Theorem of Reciprocal Displacements -- Theorem of Reciprocal Reactions -- Theorem of Reciprocal Displacement-Reaction -- Force Method -- Determination of Degree of Static Indeterminacy.
Equilibrium and Geometric Construction Characteristics of Statically Indeterminate Structures -- Determination of Degree of Indeterminacy and Number of Redundant Constraint Forces -- Fundamental Concept of the Force Method -- Primary Unknowns, Primary System, and Basic Equations of Force Method -- Analysis of Structures with Multiple Degrees of Indeterminacy by Force Method -- Canonical Equations of Force Method -- Analysis of Statically Indeterminate Frames and Bent Structures -- Analysis of Statically Indeterminate Trusses and Composite Structures -- Analysis of Symmetric Structures and Half Structures -- Selection of Symmetric Primary System -- Determination of Half Structure in Terms of Symmetry -- Two-Hinged and Hingeless Arches -- Solving Two-Hinged Arch by the Force Method -- Solving Hingeless Arch by the Force Method -- Internal Force Analysis of Structures under Support Movement or Temperature Change -- Support Movement -- Temperature Change -- Deflection Computation of Statically Indeterminate Structures -- Check for Calculated Results of Statically Indeterminate Structures -- Check of Equilibrium Conditions -- Check of Deformation Conditions -- Displacement Method -- Fundamental Concept of the Displacement Method -- A Simple Example of Displacement Method -- Primary Unknowns and Basic

Equations of Displacement Method -- Basic Idea of Calculating Frame Structures by Displacement Method -- Determination of Primary Unknowns of Displacement Method -- Slope-Deflection Equation of Prismatic Member -- Calculating Member-End Internal Forces from Member-End Displacements -- Calculating Fixed-End Internal Forces from Loads -- Analysis of Frames Without Sidesway -- Selection of Primary Unknowns -- Establishment of Basic Equations -- Analysis of Frames with Sidesway -- Analysis of Symmetric Structures -- Primary System in the Displacement Method.
Primary System of the Displacement Method -- Basic Equations of the Displacement Method -- Process of Establishing the Basic Equations of the Displacement Method -- Canonical Equations of Displacement Method -- Principle of Potential Energy and Displacement Method -- Principle of Stationary Potential Energy -- Linear Elastic Strain Energy of Prismatic Member -- Principle of Potential Energy and Equilibrium Equation of Displacement Method -- Rayleigh-Ritz Method -- Moment-Distribution Method and No-Shear Distribution Method -- Basic Principle of the Moment-Distribution Method -- Computation of Continuous Beams and Frames Without Sidesway Using the Moment-Distribution Method -- No-Shear Distribution Method -- Characteristics of Statically Indeterminate Structures -- Influence Lines for Structures under Moving Loads -- Concepts of Moving Load and Influence Line -- Equilibrium Method for Constructing Influence Lines of Simply Supported Beams -- Influence Lines for Girders and Trusses -- Influence Lines for Internal Forces of Girders -- Influence Lines for Axial Forces of Trusses -- Kinematic Method for Constructing Influence Lines of Statically Determinate Structures -- Applications of Influence Lines -- Responses Due to Various Kinds of Loads -- Most Unfavorable Position of Moving Loads -- Determination of Critical Position for Polygonal Influence Line -- Determination of Critical Position for Triangle Influence Line -- Kinematic Method for Constructing Influence Lines of Statically Indeterminate Beams -- Matrix Displacement Methods -- Fundamental Principle of the Matrix Displacement Method -- Elemental Stiffness Matrix -- Elemental Stiffness Matrix in Local Coordinate System -- Properties of Elemental Stiffness Matrix -- Coordinate Transformation of Elemental Stiffness Matrix -- Elemental Stiffness Matrix in the Global Coordinate System.
Elemental Stiffness Matrix of Continuous Beam -- Elemental Stiffness Matrix of Axial Force Bar -- Global Stiffness Matrix of Structure -- Element and Node Numberings -- Direct Stiffness Method for Assembling Global Stiffness Matrix -- Imposing Support Conditions -- Properties of Global Stiffness Matrix -- Treatment of Pinned Joints -- Equivalent Nodal Loads -- Basic Equation of Matrix Displacement Method -- Equivalent Nodal Loads of Elements -- Equivalent Nodal Loads of Structure -- Computational Procedures and Examples -- Example of Truss Analysis -- Example of Frame Structure -- Example of Composite Structure -- Matrix Displacement Method for Rectangular Frame Neglecting Axial Deformation -- Bibliography -- Appendix A1 Answers to Problems -- Appendix A2 Index -- Appendix A3 Matlab Program Codes of the Matrix Displacement Method for Plane Structural Analysis.

Sommario/riassunto

Structural Analysis is a basic course for undergraduate students with majors of civil engineering, engineering mechanics, flight vehicle design, mechanical engineering, naval architecture and ocean engineering etc., and is also an introductory course for undergraduates to learn and master the analysis and design of beam, truss, frame, arch and composite structures for buildings, bridges and flight vehicles and so on. This textbook includes eight chapters, and covers introduction,

kinematic analysis of plane member systems, analysis of statically determinate structures, principle of virtual work and deflection calculation, force method, displacement method, influence lines of structures under moving loads, and matrix displacement method. Main features of this textbook lie in: (1) strengthened the interestingness and readability, and increased brief introduction on the developmental history of structural analysis and the important figures; (2) adopted the kinematic method to construct exactly and rapidly the influence lines of forces of statically indeterminate structures proposed by the author, and highlighted the energy principles and methods; (3) increased introducing the backgrounds of engineering applications; (4) from the viewpoints of history, methodology, aesthetic appreciation and creative thinking, inspected structural analysis and strived to cultivate the innovative talents. This book is designed to serve as a textbook for students in fields such as civil engineering, engineering mechanics, flight vehicle design, mechanical engineering, and ocean engineering, as well as a helpful reference for engineers and professionals in related fields.

3. Record Nr. UNINA9911020156503321

Autore	Gorelick Steven M
Titolo	Oil panic and the global crisis : predictions and myths / / Steven M. Gorelick
Pubbl/distr/stampa	Chichester, West Sussex ; ; Hoboken, NJ, : Wiley-Blackwell, 2009
ISBN	9786612343612 9781444359893 1444359894 9781282343610 1282343610 9781444314526 1444314521 9781444314533 144431453X
Descrizione fisica	1 online resource (257 p.)
Disciplina	333.8/232
Soggetti	Petroleum industry and trade Petroleum reserves - Forecasting Energy consumption - Forecasting

Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Oil Panic and the Global Crisis; Contents; Preface; Acknowledgments; About Units; Getting Started: What Do You Think?; 1: End of the Oil Era; 2: The Global Oil Landscape; 3: The Historical Resource Depletion Debate; 4: Counter-Arguments to Imminent Global Oil Depletion; 5: Beyond Panic; Index
Sommario/riassunto	Is the world running out of oil? This book analyzes predictions of global oil depletion in the context of science, history, and economics. There has been continuing alarm about the imminent exhaustion of earth's non-renewable resources. Yet, the world has never run out of any significant, globally traded, non-renewable resource. Is the world finally facing a non-renewable resource depletion catastrophe, or is the current concern just another one of a succession of panics? In this book, key assumptions and underlying arguments in the global oil-depletion debate are first summarized and then c