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Nota di contenuto	Chapter 1: A Semi-Empirical Fluid Force Model for Vortex-Induced Vibration of an Elastic Structure -- Chapter 2: Nonlinear Buckling and Equilibria of Layered Shallow Parabolic Arches with Interlayer Slip -- Chapter 3: On the General Strategies to Formulate Shell and Plate Theories -- Chapter 4: Conceptual Generalizations of the Kapitsa Problem -- Chapter 5: Dynamic Properties of Periodic Structures with Symmetric Inclusions -- Chapter 6: Mathematical Model for Myopia Correction with MyoRing Implants -- Chapter 7: Numerical Modeling the Stresses in Incompressible and Rigid Bodies -- Chapter 8: Three-Dimensional Numerical Analysis of Natural Vibrations and Stability of Cylindrical Shells Interacting with Fluid -- Chapter 9: On the Problem of Modeling the Influence of Ice Cover and Surface Waves of a Liquid on the Dynamics of a Floating Body -- Chapter 10: Nonlinear Stationary Waves in a Thin-Walled Bar Affected by Deplanation of Its Cross-Section in Torsion -- Chapter 11: Linear Reduced ElasticIsotropic Cosserat Medium Subjected to the External Follower Viscoelastic Torque as a Smart Acoustic Metamaterial -- Chapter 12: Nonlinear Vibrations of Bimodular Continua by Means of Isogeometric Analysis -- Chapter 13: On the Equivalence Between Singular Waves Propagating in

Force Loaded Viscoelastic Bodies and in Elastic Bodies Additionally Loaded by Eigenstrains -- Chapter 14: Influence Tensors for the Analytical Mechanics of Anisotropic Eigenstressed Composites with Inclusions of Various Shapes and Orientations -- Chapter 15: Computation of Eigenstrains for Static Shape Control of Arbitrarily Shaped Sub-Domains of Force-Loaded Elastic Bodies -- Chapter 16: Flexural Deformations and Vibrations of a Three-Layer Beam-Strip with a Stiff Core and Soft Skins -- Chapter 17: Maxwell's Equations Through the Ages -- Chapter 18: Multi-Objective Optimization of the Helix Shape of Cylindrical Milling Tools -- Chapter 19: Experimental and Numerical Studies on the Tensile Strength of Lap Joints of PEEKPlates and CF Fabric Prepregs Formed by Ultrasonic Welding -- Chapter 20: On two Approaches for Determination of the Effective Conductivity of a Polycrystalline Material by Homogenization Methods -- Chapter 21: The Functionally Invariant Solutions and Nonlinear Wave Equations -- Chapter 22: Hydrogen Skin Effect vs. Hydrogen Diffusion -- Chapter 23:Bending Waves in Mass-in-Mass Metamaterial -- Chapter 24: Numerical Investigations of Large Amplitude Oscillations of Planar Parametrically Excited Beams -- Chapter 25: Continuum Mechanics Applied for Studying Instabilities in Nanoparticles -- Chapter 26: Spectral Domain Approach for the Numerical Modeling of Elastodynamic Fields in Layered Structures. .

Sommario/riassunto

This book gives an insight into the current developments in the field of continuum mechanics. Twenty-five researchers present new theoretical concepts, e.g., better inclusion of the microstructure in the models describing material behavior. At the same time, there are also more applications for the theories in engineering practice. In addition to new theoretical approaches in continuum mechanics and applications, the book puts an emphasis on discussing multi-physics problems.