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13   ISBN   9787118064322

10   ISBN   7118064327

          2009-12

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Due to the lack of the mathematical analytical tools, analytical studies on the mechanical response of composite plate and shell were difficult to be performed. A new type complex series method NCSM for solving the boundary value or eigenvalue problem of a system of partial deferential equations with constant coefficients is presented. The underdetermined functions of the governing equations are assumed in the complex series form.Substitution of the complex series into a system of the governing equations leads to characteristic root and the solutions in real series form. In the book,NCSM is applied to analyze the bending/vibration/buckling problems of rectangular, skew and circular laminated plate with symmetric and skew-sym-metric angle-ply using Classical Plate theory CPT and these analytical solutions are presented. General analytical solutions for the bending/vibration/buckling problems of rectangular/skew anisotropic plate using first-order shear deformation theory FSDT by NCSM are presented in the book. NCSM is also suggested to study the bending/vibration/buckling problems of generally laminated rectangular and skew plates using CPT and FSDT and some general analytical solutions are obtained. The analytical solutions on linear mechanical response of composite cylindrical shell using FSDT and CVI" with arbitrary laminations are obtained by NCSM. Some numerical resuits indicate the validity of NCSM. The effectiveness of the new technique is determined. NCSM is suggested to be one general method of solving for the boundary valt/e or eigenvalue problem of a system of partial deferential equations with constant coefficients. As an example, NCSM is also applied to analyze the problem for steady-state temperature in anisotropic rectangular,skew and circular domain and these general analytical solutions are also presented. There are three objectives of this book. Firstly, the fundamental concepts of NCSM is described. Secondly ,the method is used to find the general solutions in series form for the mechanical behaviors of plate and shell concerning a number of structure parameters. Thirdly, some numerical results are presented as evaluation for researchers to use in checking numerical solutions. This book can be used as textbook or reference for senior or graduate students, for faculty members in engineering mechanics and applied mathematics.

Chapter 1 Analytical Studies on the Symmetric and Skew-Symmetric Angle-ply Rectangular Laminates with Classical Plate TheoryChapter 2 General Analytical Solution for the Symmetric and Skew- symmetric Angle-ply Skew Laminates with Classical Plate TheoryChapter 3 General Analytical Solution for the Bending of Cylindrical Anisotropic Circular Plate with Classical Plate TheoryChapter 4 General Analytical Solution for the Symmetric and Skew-symmetric Angle-ply Rectangular Plate with First-order Shear Deformation TheoryChapter 5 Analysis on the Anisotropic Skew Plate with First-order Shear Deformation TheoryChapter 6 Analytical Studies on the Static Mechanical Response of Thin Rectangular Laminates with General Ply Lay-upsChapter 7 General Analytical Solution for the Mechanical Response of Thin Skew Generally Laminated Composite Plate Using Classical Plate TheoryChapter 8 Analytical Investigation for the Mechanical Response of Generally Laminated Composite Rectangular Plate Using First-order Shear Deformation TheoryChapter 9 General Analytical Solution for the Mechanical Response of Generally Laminated Composite Skew Plate Using First-order Deformation TheoryChapter 10 Analytical Studies on the Mechanical Response of Thin Composite Cylindrical Shell with Arbitrary Laminations Using Classical Shell TheoryChapter 11 Analytical Investigations on Linear Mechanical Response of Composite Cylindrical Shell with Arbitrary Laminations Using First-order Shear Deformation TheoryChapter 12 General Analytical Solution for Steady-state Temperature in Anisotropic DomainAPPENDIXReferences

In the book，NCSM is applied to analyze the bending/vibration/buckling problems of rectangular，skew and circular laminated plate with symmetric and skew-sym-metric angle-ply using Classical Plate theory（CPT）and these analytical solutions are presented. General analytical solutions for the bending/vibration/buckling problems of rectangular/skew anisotropic plate using first-order shear deformation theory（FSDT）by NCSM are presented in the book.

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