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2.4.4.1. Prediction of dual solutions by the rule of multiplicity of solutions2.4.4.2. Effective calculation of the two branches of solution; 2.4.4.3. Further results; 2.5. Concluding remarks; References; 3. Spectral Homotopy Analysis Method for Nonlinear Boundary Value Problems; 3.1. Introduction; 3.2. Basic ideas of the spectral homotopy analysis method; 3.3. Some applications of the spectral homotopy analysis method; 3.3.1. Falkner-Skan boundary layer flow; 3.3.2. Eigenvalue problems; 3.3.3. Boundary value problems with multiple solutions; 3.3.4. Coupled nonlinear boundary value equations

Sommario/riassunto

Unlike other analytic techniques, the Homotopy Analysis Method (HAM) is independent of small/large physical parameters. Besides, it provides great freedom to choose equation type and solution expression of related linear high-order approximation equations. The HAM provides a simple way to guarantee the convergence of solution series. Such uniqueness differentiates the HAM from all other analytic approximation methods. In addition, the HAM can be applied to solve some challenging problems with high nonlinearity. This book, edited by the pioneer and founder of the HAM, describes the current adva