1. Record Nr. UNINA9910790972603321

Titolo	Advances in the homotopy analysis method / / editor, Shijun Liao, Shanghai Jiao Tong University, China
Pubbl/distr/stampa	New Jersey : , : World Scientific, , [2014] 2014
ISBN	981-4551-25-2
Descrizione fisica	1 online resource (viii, 417 pages) : illustrations
Collana	Gale eBooks
Disciplina	514/.24
Soggetti	Homotopy theory
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.
Nota di contenuto	Preface; Contents; 1. Chance and Challenge: A Brief Review of Homotopy Analysis Method; 1.1. Background; 1.2. A brief history of the HAM; 1.3. Some advances of the HAM; 1.3.1. Generalized zeroth-order deformation equation; 1.3.2. Spectral HAM and complicated auxiliary operator; 1.3.3. Predictor HAM and multiple solutions; 1.3.4. Convergence condition and HAM-based software; 1.4. Relationships to other methods; 1.5. Chance and challenge: some suggested problems; 1.5.1. Periodic solutions of chaotic dynamic systems; 1.5.2. Periodic orbits of Newtonian three-body problem 1.5.3. Viscous flow past a sphere1.5.4. Viscous flow past a cylinder; 1.5.5. Nonlinear water waves; Acknowledgment; References; 2. Predictor Homotopy Analysis Method (PHAM); 2.1. Preliminaries; 2.2. Description of the method; 2.2.1. Zeroth-order deformation equation; 2.2.2. High-order deformation equation; 2.2.3. Prediction of the multiple solutions; 2.3. Convergence analysis; 2.4. Some illustrative models; 2.4.1. Nonlinear problem arising in heat transfer; 2.4.1.1. Model and exact solutions; 2.4.1.2. Prediction of dual solutions by the rule of multiplicity of solutions 2.4.1.3. Effective calculation of the two branches of solution2.4.2. Strongly nonlinear Bratu's equation; 2.4.2.1. Problem and exact solutions; 2.4.2.2. Prediction of multiple solutions by the rule of multiplicity of solutions; 2.4.2.3. Effective calculation of the two branches of solution; 2.4.3. Nonlinear reaction-diffusion model;

2.4.3.1. Equation and exact solutions; 2.4.3.2. Prediction of multiple solutions by the rule of multiplicity of solutions; 2.4.3.3. Calculation of the two branches of solution; 2.4.4. Mixed convection flows in a vertical channel
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

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Record Nr.	UNICAMPANIAVAN0071390
Autore	Hollander, Frank den
Titolo	Random polymers : École d'Été de Probabilités de Saint-Flour XXXVII-2007 / Frank den Hollander
Pubbl/distr/stampa	Berlin, : Springer, 2009
Titolo uniforme	Random polymers : École d'Été de Probabilités de Saint-Flour XXXVII-2007
ISBN	978-36-420-0332-5
Descrizione fisica	XIII, 258 p. ; 24 cm
Soggetti	60K35 - Interacting random processes; statistical mechanics type models; percolation theory [MSC 2020] 60K37 - Processes in random environments [MSC 2020] 60F10 - Large deviations [MSC 2020] 82B26 - Phase transitions (general) in equilibrium statistical mechanics [MSC 2020] 82B27 - Critical phenomena in equilibrium statistical mechanics [MSC 2020]
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Pubblicazione disponibile anche in formato elettronico

3. Record Nr. UNIORUON00136390

Autore	Nieuwenhuijze, Christoffel Anthonie Oliver : van
Titolo	Economic development in a sociological perspective : Some comments on a case study concerning Iran / C.A.O. Van Nieuwenhuijze
Pubbl/distr/stampa	pp. 277-313 ; 23 cm
Edizione	[Napoli : I.U.O.]
Descrizione fisica	Estratto dagli Annali, Nuova Serie, vol. XVII, fasc. 4
Classificazione	IRA XII
Soggetti	Economia - Iran
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia