1. Record Nr. UNINA9910480011003321

Titolo	Mathematics of continuous and discrete dynamical systems : AMS Special Session in Honor of Ronald Mickens's 70th birthday Nonstandard Finite-Difference Discretizations and Nonlinear Oscillations, January 9-10, 2013, San Diego, CA / / Abba B. Gumel, editor
Pubbl/distr/stampa	Providence, Rhode Island : , : American Mathematical Society, , 2014 ©2014
ISBN	1-4704-1686-7
Descrizione fisica	1 online resource (310 p.)
Collana	Contemporary Mathematics ; ; 618
Disciplina	515.392
Soggetti	Nonlinear oscillations Differential equations - Asymptotic theory Electronic books.
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 at the end of each chapters.
Nota di contenuto	""Preface""; ""Biographical Summary of Ronald E. Mickens""; ""Deterministic and Stochastic SIR Epidemic Models with Power Function Transmission and Recovery Rates""; ""1. Introduction""; ""2. ODE Model""; ""3. CTMC Model""; ""4. SDE Model""; ""5. Computational Results""; ""6. Summary""; ""Acknowledgments""; ""References""; ""Evaluating the Cost-Effectiveness of Vaccination Programs""; ""1. Introduction""; ""2. Background and modeling framework""; ""3. Model extensions and future research""; ""4. Summary and concluding remarks""; ""References"" ""A Simple Two-Patch Epidemiological Model with Allee Effects and Disease-Modified Fitness"""""1. Introduction""; ""2. A two-patch SI model""; ""3. Endemic states""; ""4. The effects of dispersal""; ""5. Discussion""; ""6. Proofs""; ""Acknowledgements""; ""References""; ""Designing NSFD Methods for Models of Population Interactions""; ""1. Introduction""; ""2. Definitions and Preliminaries""; ""3. PESN methods for systems with hyperbolic equilibria""; ""4. PAESN methods for systems with non-hyperbolic equilibria""; ""5. Numerical Simulations""; ""6. Discussion and Conclusions""

""References""""""Nonstandard Discretizations of the SIS Epidemiological Model with and without Diffusion""; ""1. Introduction""; ""2. Qualitative properties of the model""; ""3. Nonstandard Runge-Kutta Method for the SIS Model""; ""4. NSFD scheme for the SIS model""; ""5. NSFD schemes for SIS-Diffusion Model""; ""6. Conclusion""; ""Acknowledgements""; ""References""; ""Galerkin-Least Squares Approximations for Delay Differential Equations: Application to a Circadian Rhythm Model""; ""1. Introduction""; ""2. Galerkin-Least Squares Approximation""; ""3. DDE Model for Circadian Rhythm""
""4. Equilibria and Linear Stability Analysis""""""5. Numerical Simulations""; ""Conclusions""; ""Acknowledgements""; ""References""; ""Exact Finite Difference Schemes""; ""1. Introduction""; ""2. Exact Finite Difference Schemes for ODEs""; ""3. First-order linear system of two equations""; ""4. Exact finite difference schemes for some PDEs""; ""5. Discussion""; ""Acknowledgements""; ""References""; ""Design and Analysis of NSFD Methods for the Diffusion-Free Brusselator""; ""1. Introduction""; ""2. The diffusion-free Brusselator system""; ""3. Design of NSFD methods""
""6. Conclusions and perspectives""