1. Record Nr. UNINA9910746977603321

Titolo	Computational Methods for Biological Models / / edited by Harendra Singh, Hemen Dutta
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-9950-01-5
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (254 pages)
Collana	Studies in Computational Intelligence, , 1860-9503 ; ; 1109
Disciplina	570.151
Soggetti	Computational intelligence Computer simulation Neural networks (Computer science) Biological models Computational Intelligence Computer Modelling Mathematical Models of Cognitive Processes and Neural Networks Biological Models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	1. Exponential time-differencing method for the solution of diffusive HIV model -- 2. An effective technique for solving a model describing biological species living together -- 3. Neuro-Swarming Integrated Heuristic with an Interior-Point Scheme for Novel design of Lane-Emden Nonlinear Prediction Singular Differential Model -- 4. A fitted operator method for a system of delay model of tumor cells dynamics within their micro-environment -- 5. A Mathematical Model to Study Regulatory Properties and Dynamical Behaviour of Glycolytic Pathway using Bifurcation Analysis -- 6. On solutions of fractional biological models using reproducing kernel Hilbert space method -- 7. An operational matrix based method to find the solution of the fractional tumour immune vitamins model -- 8. Analysis of a fractional stage-structured model with Crowley-Martin type functional response by Lagrange polynomial based method -- 9. Qualitative Theory and Approximate Solution to Typhoid Fever Model Subject to Non Singular Kernel Type Derivative -- 10. Study of the SIRI epidemic model

	described by the Caputo derivative -- 11. Unlocking Biological systems through mathematical Modelling -- 12. Implementation of vaccination in epidemic model for COVID-19.
Sommario/riassunto	This book discusses computational methods related to biological models using mathematical tools and techniques. The book chapters concentrate on numerical and analytical techniques that provide a global solution for biological models while keeping long-term benefits in mind. The solutions are useful in closely understanding biological models, and the results will be very useful for mathematicians, engineers, doctors, scientists and researchers working on real-life biological models. This book provides significant and current knowledge of biological models related to real-life applications. The book covers both methods and applications.