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Nota di contenuto	COVER; TITLE PAGE; COPYRIGHT PAGE; DEDICATION; PREFACE; MAIN GOALS; THE NEED FOR A TEXTBOOK IN ELEMENTARY MATHEMATICAL MODELING AND MATRIX ALGEBRA; APPROACH; WHY MODELING WITH DIFFERENCE EQUATIONS AND MATRICES?; WHY DO WE USE MATLAB?; ORGANIZATION; THE INTENDED AUDIENCES; SUPPORT WEBSITE; ACKNOWLEDGMENTS; CHAPTER 1: OVERVIEW OF DISCRETE DYNAMICAL MODELING AND MATLAB®; 1.1. INTRODUCTION TO MODELING AND DIFFERENCE EQUATIONS; 1.2. THE MODELING PROCESS; 1.3. GETTING STARTED WITH MATLAB; CHAPTER 2: MODELING WITH FIRST-ORDER DIFFERENCE EQUATIONS 2.1. MODELING WITH FIRST-ORDER LINEAR HOMOGENOUS DIFFERENCE EQUATIONS WITH CONSTANT COEFFICIENTS 2.2. MODELING WITH NONHOMOGENOUS FIRST-ORDER LINEAR DIFFERENCE EQUATIONS; 2.3. MODELING WITH NONLINEAR DIFFERENCE EQUATIONS: LOGISTIC GROWTH MODELS; 2.4. LOGISTIC EQUATIONS AND CHAOS; CHAPTER 3: MODELING WITH MATRICES; 3.1. SYSTEMS OF LINEAR EQUATIONS HAVING UNIQUE SOLUTIONS; 3.2. THE GAUSS-JORDAN ELIMINATION METHOD WITH MODELS; 3.3. INTRODUCTION TO MATRICES; 3.4. DETERMINANTS AND SYSTEMS OF LINEAR EQUATIONS; 3.5. EIGENVALUES AND EIGENVECTORS; 3.6. EIGENVALUES AND STABILITY

OF LINEAR MODELS

CHAPTER 4: MODELING WITH SYSTEMS OF LINEAR DIFFERENCE EQUATIONS 4.1. MODELING WITH MARKOV CHAINS; 4.2. AGE-STRUCTURED POPULATION MODELS; 4.3. MODELING WITH SECOND-ORDER LINEAR DIFFERENCE EQUATIONS; CHAPTER 5: MODELING WITH NONLINEAR SYSTEMS OF DIFFERENCE EQUATIONS; 5.1. MODELING OF INTERACTING SPECIES; 5.2. THE SIR MODEL OF INFECTIOUS DISEASE; 5.3. MODELING WITH SECOND-ORDER NONLINEAR DIFFERENCE EQUATIONS; REFERENCES; INDEX

Sommario/riassunto

Explore and analyze the solutions of mathematical models from diverse disciplines As biology increasingly depends on data, algorithms, and models, it has become necessary to use a computing language, such as the user-friendly MATLAB, to focus more on building and analyzing models as opposed to configuring tedious calculations. Explorations of Mathematical Models in Biology with MATLAB provides an introduction to model creation using MATLAB, followed by the translation, analysis, interpretation, and observation of the models. With an integrated and interdisciplinary approach

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Altri autori (Persone)

SinghRajendra <1943-2012.>
SharmaGhanshyam <1952->

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Soggetti

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Nota di contenuto

Frontmatter -- Contents -- Editorial Preface -- General Contributions -- Metatypy in Sri Lanka Malay / Ansaldo, Umberto -- Benglish verbs: A case of code-mixing in Bengali / Bhattacharja, Shishir -- Agreement and non-finite verbs in Bangla: A biaxial approach / Dasgupta, Probal -- On the role of protases in conditional statements: Some evidence from Hindi / Sharma, Ghanshyam -- Special Contributions: The Indigenous Languages of South Asia -- Aspects of Kharia grammar: A Role and Reference Grammar approach / Peterson, John -- Grammatical voice in Gorum / Rau, Felix -- Regional Reports -- India / Sailaja, Pingali -- Reviews -- Mrinal Kaul and Ashok Aklujkar (Eds.) - Linguistic traditions of Kashmir / Bhattacharja, Shishir -- S. Imtiaz Hasnain & Shreesh Chaudhary (Eds.) - Problematizing Language Studies. Cultural, Theoretical and Applied Perspectives. Essays in Honor of Rama Kant Agnihotri / Sharma, Ghanshyam -- Appendices -- Announcements: The Gyandeeep Prize -- Notes on Contributors

Sommario/riassunto

South Asia is home to a large number of languages and dialects. Although linguists working on this region have made significant contributions to our understanding of language, society, and language in society on a global scale, there is as yet no recognized international forum for the exchange of ideas amongst linguists working on South Asia. The Annual Review of South Asian Languages and Linguistics is designed to be just that forum. It brings together empirical and theoretical research and serves as a testing ground for the articulation of new ideas and approaches which may be grounded in a study of South Asian languages but which have universal applicability. Each volume will have three major sections: I. Invited contributions consisting of state-of-the-art essays on research in South Asian languages. II. Refereed open submissions focusing on relevant issues and providing various viewpoints. III. Reports from around the world, book reviews and abstracts of doctoral theses.