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Autore	Velten Kai
Titolo	Mathematical modeling and simulation : introduction for scientists and engineers / / Kai Velten
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Nota di contenuto	Mathematical Modeling and Simulation; Contents; Preface; 1 Principles of Mathematical Modeling; 1.1 A Complex World Needs Models; 1.2 Systems, Models, Simulations; 1.2.1 Teleological Nature of Modeling and Simulation; 1.2.2 Modeling and Simulation Scheme; 1.2.3 Simulation; 1.2.4 System; 1.2.5 Conceptual and Physical Models; 1.3 Mathematics as a Natural Modeling Language; 1.3.1 Input-Output Systems; 1.3.2 General Form of Experimental Data; 1.3.3 Distinguished Role of Numerical Data; 1.4 Definition of Mathematical Models; 1.5 Examples and Some More Definitions 1.5.1 State Variables and System Parameters1.5.2 Using Computer Algebra Software; 1.5.3 The Problem Solving Scheme; 1.5.4 Strategies to Set up Simple Models; 1.5.4.1 Mixture Problem; 1.5.4.2 Tank Labeling Problem; 1.5.5 Linear Programming; 1.5.6 Modeling a Black Box System; 1.6 Even More Definitions; 1.6.1 Phenomenological and

Mechanistic Models; 1.6.2 Stationary and Instationary models; 1.6.3 Distributed and Lumped models; 1.7 Classification of Mathematical Models; 1.7.1 From Black to White Box Models; 1.7.2 SQM Space Classification: S Axis; 1.7.3 SQM Space Classification: Q Axis
1.7.4 SQM Space Classification: M Axis1.8 Everything Looks Like a Nail?; 2 Phenomenological Models; 2.1 Elementary Statistics; 2.1.1 Descriptive Statistics; 2.1.1.1 Using Calc; 2.1.1.2 Using the R Commander; 2.1.2 Random Processes and Probability; 2.1.2.1 Random Variables; 2.1.2.2 Probability; 2.1.2.3 Densities and Distributions; 2.1.2.4 The Uniform Distribution; 2.1.2.5 The Normal Distribution; 2.1.2.6 Expected Value and Standard Deviation; 2.1.2.7 More on Distributions; 2.1.3 Inferential Statistics; 2.1.3.1 Is Crop A's Yield Really Higher?; 2.1.3.2 Structure of a Hypothesis Test
2.1.3.3 The t test2.1.3.4 Testing Regression Parameters; 2.1.3.5 Analysis of Variance; 2.2 Linear Regression; 2.2.1 The Linear Regression Problem; 2.2.2 Solution Using Software; 2.2.3 The Coefficient of Determination; 2.2.4 Interpretation of the Regression Coefficients; 2.2.5 Understanding LinRegEx1.r; 2.2.6 Nonlinear Linear Regression; 2.3 Multiple Linear Regression; 2.3.1 The Multiple Linear Regression Problem; 2.3.2 Solution Using Software; 2.3.3 Cross-Validation; 2.4 Nonlinear Regression; 2.4.1 The Nonlinear Regression Problem; 2.4.2 Solution Using Software
2.4.3 Multiple Nonlinear Regression2.4.4 Implicit and Vector-Valued Problems; 2.5 Neural Networks; 2.5.1 General Idea; 2.5.2 Feed-Forward Neural Networks; 2.5.3 Solution Using Software; 2.5.4 Interpretation of the Results; 2.5.5 Generalization and Overfitting; 2.5.6 Several Inputs Example; 2.6 Design of Experiments; 2.6.1 Completely Randomized Design; 2.6.2 Randomized Complete Block Design; 2.6.3 Latin Square and More Advanced Designs; 2.6.4 Factorial Designs; 2.6.5 Optimal Sample Size; 2.7 Other Phenomenological Modeling Approaches; 2.7.1 Soft Computing
2.7.1.1 Fuzzy Model of a Washing Machine

Sommario/riassunto

This concise and clear introduction to the topic requires only basic knowledge of calculus and linear algebra - all other concepts and ideas are developed in the course of the book. Lucidly written so as to appeal to undergraduates and practitioners alike, it enables readers to set up simple mathematical models on their own and to interpret their results and those of others critically. To achieve this, many examples have been chosen from various fields, such as biology, ecology, economics, medicine, agricultural, chemical, electrical, mechanical and process engineering, which are subsequently

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Titolo	Axiological Illnesses : About the Dangerous Dimension of Values
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Descrizione fisica	1 online resource (179 pages)
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Nota di contenuto	Intro -- Foreword -- Chapter 1 The Axiological Bankruptcy of Life0F(-- Abstract -- A new praise of folly -- A painful axiological dilemma: idealism or wisdom -- Conclusions -- Chapter 2 The Demonism of Creation in Goethe's Philosophy -- Abstract -- About a strange exorcise: The Elegy from Marienbad -- A book like a "postponed suicide" -- The demonism of creation40F -- Conclusions -- Chapter 3 Two Axiological Illnesses -- Abstract -- Axiological blindness -- The Tyranny of Values -- The axioclasm -- Conclusion -- Chapter 4 Nihilism as Axiological Illness85F(-- Abstract -- The Savior as Idiot -- Blessed Are Those Who Are Poor in Spirit? An Axiological Interpretation of a Mysterious Expresion -- Philosophy ss Convalescence Treatise -- Patients and Physicians of Culture -- Chapter 5 Puerilism: An Axiological Approach170F(-- Abstract -- A Necessary Distinction: Cultural Maladies and Axiological Maladies -- Puerilism as an Axiological Malady and its Symptoms -- Ecce Homo Patiens -- Chapter 6 Realism and Idealism in the Demonic Nature of Political Power229F(-- Concept of "Power Demonism" -- Creator of the "State as a Work of Art" -- Creativity of Actions -- Conclusion -- Chapter 7 Iconostrophia of the Spirit258F(-- Abstract -- About a Certain "Lebensgefühl" of Orthodoxy -- The Icon as an Expression of the Sophianic Feeling of Life -- Conclusions -- Chapter 8 Kant's Aesthetic Ideas as Axiological

Memory -- Abstract -- Aesthetic ideas as values -- The Artist of Axiological Memory -- Conclusion -- Chapter 9 The Conventional Lie: An Almost Forgotten Concept -- Abstract -- Pia fraus -- The religious lie -- The matrimonial lie -- The political lie -- Conclusions -- Chapter 10 Axiological Interpretation: To Rediscover an Important Hermeneutical Concept -- Abstract -- Ideal type as a hermeneutic instrument -- The birth of the hermeneutics of values. Conclusions -- Chapter 11 Catastrophic Idealism: The case of Fichte -- De-demonization of the political power -- The myth of the 19th century -- The Idea as a weapon -- Conclusions.

Sommario/riassunto

Axiology can be summarised as the branch of philosophy which studies the nature of value and values. In this collection, Professor Nicolae Râmbu addresses axiology through the lens of 'illnesses' - drawing on philosophical works from Kant, Nietzsche, Hildebrand, and Fichte; and the literature of Dostoevsky, Goethe, Shakespeare and Machiavelli, amongst many others. The common element among the collection is the explosive nature of values. This book serves as a warning that such sublime things as values can sometimes become so dangerous that they can destroy lives or even entire civilizations. It will be a valuable addition to any library supporting teaching and study in philosophy and the humanities.