

1. Record Nr.	UNINA9910965835103321
Autore	Yakimenko Oleg A
Titolo	Engineering computations and modeling in MATLAB/Simulink / / Oleg A. Yakimenko
Pubbl/distr/stampa	Reston, Va., : American Institute of Aeronautics and Astronautics, c2011
ISBN	1-60086-783-9 1-62198-102-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (938 p.)
Collana	AIAA education series
Disciplina	620.00285
Soggetti	Engineering mathematics - Data processing Computer programming
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Cover -- Title -- Copyright -- Contents -- List of Color Plates -- Preface -- Conventions -- List of Acronyms -- Part 1 Basics of MATLAB -- Chapter 1 MATLAB/Simulink as a Technical ComputingLanguage -- Chapter 2 Development Environment and Basic Operations -- Chapter 3 Arrays and Array Operations -- Chapter 4 Data Structures, Types of Files, Managing Data Inputand Output -- Chapter 5 Programming in MATLAB -- Chapter 6 2-D and 3-D Plotting and Animation -- Part 2 Symbolic Math Toolbox -- Chapter 7 Symbolic Math Toolbox -- Part 3 Numerical Methods in MATLAB -- Chapter 8 Accuracy of Digital Computations -- Chapter 9 Numerical Linear Algebra and Eigenvalue Problems -- Chapter 10 Root Finding and Introduction to Optimization -- Chapter 11 Curve Fitting to Measured Data -- Chapter 12 Numerical Differentiation -- Chapter 13 Numerical Integration -- Part 4 Basics of Modeling in MATLAB and Simulink -- Chapter 14 Initial-Value Problem -- Chapter 15 Simulink Basics -- Appendix A Solutions -- Appendix B Hooke-Jeeves Minimization Function -- Appendix C GUI Development Environment (GUIDE) -- Appendix D Creating Standalone Applications -- Appendix E Aerospace Systems Modeling Tools -- Bibliography -- MATLAB Functions Index -- Index -- Supporting Materials.
Sommario/riassunto	Engineering Computations and Modeling in MATLAB(R)/Simulink(R) provides a broad overview of The MathWorks' MATLAB(R)/Simulink(R)

/GUIDE development and modeling environment. This textbook shows how to use these software tools effectively in a variety of engineering applications, including modeling real-world dynamic systems.

Concepts Discussed: Major concepts of MATLAB(R), Symbolic Math ToolboxA', Simulink(R), and GUIDE * Development of effective foolproof M-file scripts and functions * Use of the 2D and 3D plotting functions and handle graphics * Creation of interactive user interfaces and animations * Presentation of numerical methods, coded in MATLAB(R) functions * Accuracy of digital computations Special Features: * Numerous examples * Derivation of fundamental formulas using symbolic math computations * Dynamic systems modeling in MATLAB (R) and Simulink(R) * Development of user-friendly standalone GUIs * Introduction of aerospace engineering tools This book is used as a textbook by undergraduate and graduate students taking introductory and advanced courses in applied programming, and also as a reference for working professionals using MATLAB(R)/Simulink(R).
