

John Roth Vhdl

Digital Systems Design Using VHDL
Digital Systems Design Using VHDL
Digital Systems Design Using Verilog
Fundamentals of Logic Design
Fundamentals of Logic Design, Enhanced Edition, Loose-Leaf Version
Digital System Design Using Verilog + Mindtap Engineering, 1-term Access
Digital Systems Design with VHDL
Digital System Design Using Verilog + Mindtap Engineering, 2-term Access
Digital Design
FUNDAMENTALS OF LOGIC DESIGN + WEBASSIGN MULTI -TERM PRINTED ACCESS CARD.
Fundamentals of Logic Design
Smart Embedded Systems and Applications
Simulation and Optimization of Digital Circuits
Electric Circuits
Electronic Products Magazine
Digital Design Using VHDL
Drug-like Properties: Concepts, Structure Design and Methods
VHDL
Digital Design
Fundamentals of Digital Logic with VHDL Design
Engineering Digital Design
Digital Logic and Microprocessor Design with Interfacing
Computer Vision - ECCV 2022
Digital Systems Design Using VHDL
Project Management for Engineering, Business and Technology
A Field Guide to Genetic Programming
Encyclopedia of Computer Science and Technology
Verilog HDL
Image Processing Using FPGAs
Circuit Design with VHDL, third edition
Programación de Sistemas Digitales con VHDL
Books In Print 2004-2005
Abstrakte Modellierung digitaler Schaltungen
The Toys of He-Man and the Masters of the Universe
The Cumulative Book Index
Gaming and the Virtual Sublime
Annual Report
Advanced Digital Design with the Verilog HDL
Deterministic and Stochastic Approaches in Computer Modeling and Simulation
VHDL-Synthese

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2017-01-01 Lizy Kurian John

2008 Charles H. Roth Written for an advanced-level course in digital systems design, DIGITAL SYSTEMS DESIGN USING VHDL integrates the use of the industry-standard hardware description language VHDL into the digital design process. Following a review of basic concepts of logic design, the author introduces the basics of VHDL, and then incorporates more coverage of advanced VHDL topics. Rather than simply teach VHDL as a programming language, this book emphasizes the practical use of VHDL in the digital design process.

2015-01-01 Charles Roth DIGITAL SYSTEMS DESIGN USING VERILOG integrates coverage of logic design principles, Verilog as a hardware design language, and FPGA implementation to help electrical and computer engineering students master the process of designing and testing new hardware configurations. A Verilog equivalent of authors

Roth and John's previous successful text using VHDL, this practical book presents Verilog constructs side-by-side with hardware, encouraging students to think in terms of desired hardware while writing synthesizable Verilog. Following a review of the basic concepts of logic design, the authors introduce the basics of Verilog using simple combinational circuit examples, followed by models for simple sequential circuits. Subsequent chapters ask readers to tackle more and more complex designs. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

2020 Charles H. Roth, Jr. Master the principles of logic design with the exceptional balance of theory and application found in Roth/Kinney/John's FUNDAMENTALS OF LOGIC DESIGN, ENHANCED, 7th Edition. This edition introduces you to today's latest advances. The authors have carefully developed

a clear presentation that introduces the fundamental concepts of logic design without overwhelming you with the mathematics of switching theory. Twenty engaging, easy-to-follow study units present basic concepts, such as Boolean algebra, logic gate design, flip-flops and state machines. You learn to design counters, adders, sequence detectors and simple digital systems. After mastering the basics, you progress to modern design techniques using programmable logic devices as well as VHDL hardware description language.

2020 Jr. Charles H. Roth

2015 Charles H. Roth

2013 M. Morris Mano For courses on digital design in an Electrical Engineering, Computer Engineering, or Computer Science department. Digital Design, fifth edition is a modern update of the classic authoritative text on digital

design. This book teaches the basic concepts of digital design in a clear, accessible manner. The book presents the basic tools for the design of digital circuits and provides procedures suitable for a variety of digital applications.

2020 CHARLES H. ROTH (JR.)
 2004 Charles H. Roth Updated with modern coverage, a streamlined presentation, and an excellent CD-ROM, this fifth edition achieves a balance between theory and application. Author Charles H. Roth, Jr. carefully presents the theory that is necessary for understanding the fundamental concepts of logic design while not overwhelming students with the mathematics of switching theory. Divided into 20 easy-to-grasp study units, the book covers such fundamental concepts as Boolean algebra, logic gates design, flip-flops, and state machines. By combining flip-flops with networks of logic gates, students will learn to design counters, adders, sequence detectors, and simple digital systems. After covering the basics, this text presents modern design techniques using programmable logic devices and the VHDL hardware description language.

2023-02-20 Saad Motahir This book covers a wide range of challenges, technologies and state-of-the-art for the design, development and realization of smart and complex embedded systems and their applications; i.e., software and hardware development, with the use of digital technologies, and quality assurance for critical applications. This book starts with automotive safety systems which is one of the major functional domains. It discusses the importance of software in automotive systems followed by an insight into Automotive Software Standards, ISO26262, and Autosar. The book further discusses the use of Processor in the loop test for an adaptive trajectory tracking control for quadrotor UAVs. It also illustrates the role of embedded systems in medical engineering. Various innovative applications involving the concept of image processing and Internet of Things are also presented in this book. The SoC Power Estimation is also investigated. Finally, a Review of the Hardware/Software Partitioning Algorithms with some future works have been presented. this book is intended for academicians, researchers, and industrialists.

2018-04-12 Vazgen Melikyan This book describes new, fuzzy logic-based mathematical apparatus, which enable readers to work with continuous variables, while implementing whole circuit simulations with speed, similar to gate-level simulators and accuracy, similar to circuit-level simulators. The author demonstrates newly developed principles of digital integrated circuit simulation and optimization that take into consideration various external and internal destabilizing factors, influencing the operation of digital ICs. The discussion includes factors including radiation, ambient temperature, electromagnetic fields, and climatic conditions, as well as non-ideality of interconnects and power rails.

2016-12-05 James S. Kang Now readers can master the fundamentals of electric circuits with Kang's ELECTRIC CIRCUITS. Readers learn the basics of electric circuits with common design practices and simulations as the book presents clear step-by-step examples, practical exercises, and problems. Each chapter

includes several examples and problems related to circuit design, with answers for odd-numbered questions so learners can further prepare themselves with self-guided study and practice. ELECTRIC CIRCUITS covers everything from DC circuits and AC circuits to Laplace transformed circuits. MATLAB scripts for certain examples give readers an alternate method to solve circuit problems, check answers, and reduce laborious derivations and calculations. This edition also provides PSpice and Simulink examples to demonstrate electric circuit simulations. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

1993
 2016 William J. Dally Provides students with a system-level perspective and the tools they need to understand, analyze and design complete digital systems using VHDL. It goes beyond the design of simple combinational and sequential modules to show how such modules are used to build complete systems, reflecting digital design in the real world.

2010-07-26 Li Di Of the thousands of novel compounds that a drug discovery project team invents and that bind to the therapeutic target, typically only a fraction of these have sufficient ADME/Tox properties to become a drug product. Understanding ADME/Tox is critical for all drug researchers, owing to its increasing importance in advancing high quality candidates to clinical studies and the processes of drug discovery. If the properties are weak, the candidate will have a high risk of failure or be less desirable as a drug product. This book is a tool and resource for scientists engaged in, or preparing for, the selection and optimization process. The authors describe how properties affect in vivo pharmacological activity and impact in vitro assays. Individual drug-like properties are discussed from a practical point of view, such as solubility, permeability and metabolic stability, with regard to fundamental understanding, applications of property data in drug discovery and examples of structural modifications that have achieved improved property performance. The authors also review various methods for the screening (high throughput), diagnosis (medium throughput) and in-depth (low throughput) analysis of drug properties. Serves as an essential working handbook aimed at scientists and students in medicinal chemistry Provides practical, step-by-step guidance on property fundamentals, effects, structure-property relationships, and structure modification strategies Discusses improvements in pharmacokinetics from a practical chemist's standpoint

1998 Zainalabedin Navabi Complete with coverage of the latest VHDL93 standard, this edition offers engineers a thorough guide to the use of VHDL hardware description language in the analysis, simulation, and modeling of complicated microelectronic circuits. Extensive worked problems and examples listed in Verilog as well as VHDL set this edition apart from other VHDL texts.

2002-07 John F. Wakerly Appropriate for a first or second course in digital logic design. This newly revised book blends academic precision and practical experience in an authoritative introduction to basic principles of digital design and practical requirements in both board-level

and VLSI systems. With over twenty years of experience in both industrial and university settings, the author covers the most widespread logic design practices while building a solid foundation of theoretical and engineering principles for students to use as they go forward in this fast moving field.

2005 Stephen D. Brown Fundamentals of Digital Logic With VHDL Design teaches the basic design techniques for logic circuits. It emphasizes the synthesis of circuits and explains how circuits are implemented in real chips. Fundamental concepts are illustrated by using small examples, which are easy to understand. Then, a modular approach is used to show how larger circuits are designed. VHDL is used to demonstrate how the basic building blocks and larger systems are defined in a hardware description language, producing designs that can be implemented with modern CAD tools. The book emphasizes the concepts that should be covered in an introductory course on logic design, focusing on: Logic functions, gates, and rules of Boolean algebra Circuit synthesis and optimization techniques Number representation and arithmetic circuits Combinational-circuit building blocks, such as multiplexers, decoders, encoders, and code converters Sequential-circuit building blocks, such as flip-flops, registers, and counters Design of synchronous sequential circuits Use of the basic building blocks in designing larger systems It also includes chapters that deal with important, but more advanced topics: Design of asynchronous sequential circuits Testing of logic circuits For students who have had no exposure to basic electronics, but are interested in learning a few key concepts, there is a chapter that presents the most basic aspects of electronic implementation of digital circuits. Major changes in the second edition of the book include new examples to clarify the presentation of fundamental concepts over 50 new examples of solved problems provided at the end of chapters NAND and NOR gates now introduced in Chapter 2 more complete discussion of techniques for minimization of logic functions in Chapter 4 (including the tabular method) a new chapter explaining the CAD flow for synthesis of logic circuits Altera's Quartus II CAD software provided on a CD-ROM three appendices that give tutorials on the use of Quartus II software

2000-01-18 Richard F. Tinker Engineering Digital Design, Second Edition provides the most extensive coverage of any available textbook in digital logic and design. The new REVISED Second Edition published in September of 2002 provides 5 productivity tools free on the accompanying CD ROM. This software is also included on the Instructor's Manual CD ROM and complete instructions accompany each software program. In the REVISED Second Edition modern notation combines with state-of-the-art treatment of the most important subjects in digital design to provide the student with the background needed to enter industry or graduate study at a competitive level. Combinatorial logic design and synchronous and asynchronous sequential machine design methods are given equal weight, and new ideas and design approaches are explored. The productivity tools provided on the accompanying CD are outlined below: [1] EXL-Sim2002 logic simulator: EXL-Sim2002 is a

full-featured, interactive, schematic-capture and simulation program that is ideally suited for use with the text at either the entry or advanced-level of logic design. Its many features include drag-and-drop capability, rubber banding, mixed logic and positive logic simulations, macro generation, individual and global (or randomized) delay assignments, connection features that eliminate the need for wire connections, schematic page sizing and zooming, waveform zooming and scrolling, a variety of printout capabilities, and a host of other useful features. [2] BOOZER logic minimizer: BOOZER is a software minimization tool that is recommended for use with the text. It accepts entered variable (EV) or canonical (1's and 0's) data from K-maps or truth tables, with or without don't cares, and returns an optimal or near optimal single or multi-output solution. It can handle up to 12 functions Boolean functions and as many inputs when used on modern computers. [3] ESPRESSO II logic minimizer: ESPRESSO II is another software minimization tool widely used in schools and industry. It supports advanced heuristic algorithms for minimization of two-level, multi-output Boolean functions but does not accept entered variables. It is also readily available from the University of California, Berkeley, 1986 VLSI Tools Distribution. [4] ADAM design software: ADAM (for Automated Design of Asynchronous Machines) is a very powerful productivity tool that permits the automated design of very complex asynchronous state machines, all free of timing defects. The input files are state tables for the desired state machines. The output files are given in the Berkeley format appropriate for directly programming PLAs. ADAM also allows the designer to design synchronous state machines, timing-defect-free. The options include the lumped path delay (LPD) model or NESTED CELL model for asynchronous FSM designs, and the use of D FLIP-FLOPs for synchronous FSM designs. The background for the use of ADAM is covered in Chapters 11, 14 and 16 of the REVISED 2nd Edition. [5] A-OPS design software: A-OPS (for Asynchronous One-hot Programmable Sequencers) is another very powerful productivity tool that permits the design of asynchronous and synchronous state machines by using a programmable sequencer kernel. This software generates a PLA or PAL output file (in Berkeley format) or the VHDL code for the automated timing-defect-free designs of the following: (a) Any 1-Hot programmable sequencer up to 10 states. (b) The 1-Hot design of multiple asynchronous or synchronous state machines driven by either PLDs or RAM. The input file is that of a state table for the desired state machine. This software can be used to design systems with the capability of instantly switching between several radically different controllers on a time-shared basis. The background for the use of A-OPS is covered in Chapters 13, 14 and 16 of the REVISED 2nd Edition.

2017-01 ENOCH. HWANG

2022-10-22 Shai Avidan The 39-volume set, comprising the LNCS books 13661 until 13699, constitutes the refereed proceedings of the 17th European Conference on Computer Vision, ECCV 2022, held in Tel Aviv, Israel, during October 23-27, 2022. The 1645 papers presented in these proceedings were carefully

reviewed and selected from a total of 5804 submissions. The papers deal with topics such as computer vision; machine learning; deep neural networks; reinforcement learning; object recognition; image classification; image processing; object detection; semantic segmentation; human pose estimation; 3d reconstruction; stereo vision; computational photography; neural networks; image coding; image reconstruction; object recognition; motion estimation.

2007-03-30 Charles H. Roth, Jr. This textbook is intended for a senior-level course in digital systems design. The book covers both basic principles of digital systems design and the use of a hardware description language, VHDL, in the design process.

2020-08-02 John M. Nicholas Project Management for Engineering, Business and Technology is a highly regarded textbook that addresses project management across all industries. First covering the essential background, from origins and philosophy to methodology, the bulk of the book is dedicated to concepts and techniques for practical application. Coverage includes project initiation and proposals, scope and task definition, scheduling, budgeting, risk analysis, control, project selection and portfolio management, program management, project organization, and all-important "people" aspects—project leadership, team building, conflict resolution, and stress management. The systems development cycle is used as a framework to discuss project management in a variety of situations, making this the go-to book for managing virtually any kind of project, program, or task force. The authors focus on the ultimate purpose of project management—to unify and integrate the interests, resources and work efforts of many stakeholders, as well as the planning, scheduling, and budgeting needed to accomplish overall project goals. This sixth edition features: updates throughout to cover the latest developments in project management methodologies; a new chapter on project procurement management and contracts; an expansion of case study coverage throughout, including those on the topic of sustainability and climate change, as well as cases and examples from across the globe, including India, Africa, Asia, and Australia; and extensive instructor support materials, including an instructor's manual, PowerPoint slides, answers to chapter review questions and a test bank of questions. Taking a technical yet accessible approach, this book is an ideal resource and reference for all advanced undergraduate and graduate students in project management courses, as well as for practicing project managers across all industry sectors.

2008 Genetic programming (GP) is a systematic, domain-independent method for getting computers to solve problems automatically starting from a high-level statement of what needs to be done. Using ideas from natural evolution, GP starts from an ooze of random computer programs, and progressively refines them through processes of mutation and sexual recombination, until high-fitness solutions emerge. All this without the user having to know or specify the form or structure of solutions in advance. GP has generated a plethora of human-competitive

results and applications, including novel scientific discoveries and patentable inventions. This unique overview of this exciting technique is written by three of the most active scientists in GP. See www.gp-field-guide.org.uk for more information on the book.

2000-04-28 Allen Kent Combining Artificial Neural Networks to Symbolic and Algebraic computation

2003 Samir Palnitkar VERILOG HDL, Second Edition by Samir Palnitkar With a Foreword by Prabhu Goel Written for both experienced and new users, this book gives you broad coverage of Verilog HDL. The book stresses the practical design and verification perspective of Verilog rather than emphasizing only the language aspects. The information presented is fully compliant with the IEEE 1364-2001 Verilog HDL standard. Among its many features, this edition- bull; bull; Describes state-of-the-art verification methodologies bull; Provides full coverage of gate, dataflow (RTL), behavioral and switch modeling bull; Introduces you to the Programming Language Interface (PLI) bull; Describes logic synthesis methodologies bull; Explains timing and delay simulation bull; Discusses user-defined primitives bull; Offers many practical modeling tips Includes over 300 illustrations, examples, and exercises, and a Verilog resource list. Learning objectives and summaries are provided for each chapter. About the CD-ROM The CD-ROM contains a Verilog simulator with a graphical user interface and the source code for the examples in the book. What people are saying about Verilog HDL- "Mr. Palnitkar illustrates how and why Verilog HDL is used to develop today's most complex digital designs. This book is valuable to both the novice and the experienced Verilog user. I highly recommend it to anyone exploring Verilog based design." -Rajeev Madhavan, Chairman and CEO, Magma Design Automation "This book is unique in its breadth of information on Verilog and Verilog-related topics. It is fully compliant with the IEEE 1364-2001 standard, contains all the information that you need on the basics, and devotes several chapters to advanced topics such as verification, PLI, synthesis and modeling techniques." -Michael McNamara, Chair, IEEE 1364-2001 Verilog Standards Organization This has been my favorite Verilog book since I picked it up in college. It is the only book that covers practical Verilog. A must have for beginners and experts." -Berend Ozceri, Design Engineer, Cisco Systems, Inc.

"Simple, logical and well-organized material with plenty of illustrations, makes this an ideal textbook." -Arun K. Somani, Jerry R. Junkins Chair Professor, Department of Electrical and Computer Engineering, Iowa State University, Ames PRENTICE HALL Professional Technical Reference Upper Saddle River, NJ 07458 www.phptr.com ISBN: 0-13-044911-3

2019-06-11 Donald Bailey This book presents a selection of papers representing current research on using field programmable gate arrays (FPGAs) for realising image processing algorithms. These papers are reprints of papers selected for a Special Issue of the Journal of Imaging on image processing using FPGAs. A diverse range of topics is covered, including parallel soft processors, memory management, image filters, segmentation, clustering, image analysis, and image compression. Applications

include traffic sign recognition for autonomous driving, cell detection for histopathology, and video compression. Collectively, they represent the current state-of-the-art on image processing using FPGAs.

2020-04-14 Volnei A. Pedroni A completely updated and expanded comprehensive treatment of VHDL and its applications to the design and simulation of real, industry-standard circuits. This comprehensive treatment of VHDL and its applications to the design and simulation of real, industry-standard circuits has been completely updated and expanded for the third edition. New features include all VHDL-2008 constructs, an extensive review of digital circuits, RTL analysis, and an unequalled collection of VHDL examples and exercises. The book focuses on the use of VHDL rather than solely on the language, with an emphasis on design examples and laboratory exercises. The third edition begins with a detailed review of digital circuits (combinatorial, sequential, state machines, and FPGAs), thus providing a self-contained single reference for the teaching of digital circuit design with VHDL. In its coverage of VHDL-2008, it makes a clear distinction between VHDL for synthesis and VHDL for simulation. The text offers complete VHDL codes in examples as well as simulation results and comments. The significantly expanded examples and exercises include many not previously published, with multiple physical demonstrations meant to inspire and motivate students. The book is suitable for undergraduate and graduate students in VHDL and digital circuit design, and can be used as a professional reference for VHDL practitioners. It can also serve as a text for digital VLSI in-house or academic courses.

2014-10-21 David Jaime González Maxinez En la actualidad prácticamente todos los seres humanos nos encontramos rodeados de sistemas electrónicos de alta sofisticación que han cambiado nuestro estilo de vida, haciéndolo cada vez más confortable, como son teléfonos celulares, computadoras personales, televisores de alta definición, equipos de sonido, dispositivos de telecomunicaciones, equipos de medición o robots de investigación, entre otros. Todos estos sistemas tienen una similitud: su tamaño, de dimensiones tan pequeñas que parece increíble que sean igual o más potentes que los sistemas de mayor volumen que existieron hace algunos años. Estos avances son posibles gracias al desarrollo de la nanotecnología.

2004 Bowker Editorial Staff

2013-03-08 Klaus ten Hagen Kommentare von

erfahrenen Hardwareentwicklern: "Ich kenne kein Buch, daß die Modellierung von Hardware so grundlegend behandelt. Alle mir bekannten Bücher beschreiben die Sprache VHDL und bringen viele Beispiele, gehen aber nicht darauf ein, wie man entwickelt, was beim Umgang mit VHDL und Synthese alles passieren kann und welche Gedanken man sich machen sollte, bevor man beginnt, den Code zu hacken. Endlich einmal alles in einem Buch!" "Das Buch gibt dem unerfahrenen Designer den richtigen Einstieg und dem erfahrenen den richtigen Umstieg. Es ist unglaublich, wie oft die Frage 'Was ist Abstract Modeling` gestellt wird. Hier ist die Antwort - theoretisch aufgearbeitet und mit praktischen Beispielen untermauert."

2021-05-04 Val Staples A massive, 700-plus-page, full-color hardcover chronicling the quintessential toys of He-Man, She-Ra, and the other Masters of the Universe! In the 1980s, the Masters of the Universe toy lines shook the world of children's entertainment to its foundations. Now, YouTube influencer "Pixel Dan" Eardley and He-Man historian Val Staples have worked with fans worldwide to cultivate this incredible volume that contains in-depth overviews of every item in several complete toy lines, including: 1982's Masters of the Universe, 1985's Princess of Power, 1989's He-Man, 2002's Masters of the Universe relaunch, and 2008's Masters of the Universe Classics! In addition to expertly-researched documentation of the toys' development and unique variants, each entry also includes photographic reference of the heroic figures and playsets from decades of development. This phenomenal tome also features never-before-seen interviews and designer commentary from the toys' creators, offering keen insights into the genesis of a product that inspired millions of young imaginations. With over 700 pages of lovingly assembled content, this compendium is the perfect addition to any Masters of the Universe fan's collection. By the power of Grayskull, you have the power!

1999

2020-08-28 Matthew Spokes Gaming and the Virtual Sublime considers the 'virtual sublime' as a conceptual toolbox for understanding our affective engagement with contemporary interactive entertainment.

1987 Science Council of Canada

2011 Michael D. Ciletti This title builds on the student's background from a first course in logic design and focuses on developing, verifying, and synthesizing designs of digital circuits. The Verilog language is introduced in an integrated, but selective manner, only as needed to support design examples.

2023-10-09 Romansky, Radi Petrov In the field of computer modeling and simulation, academic scholars face a pressing challenge—how to navigate the complex landscape of both deterministic and stochastic approaches to modeling. This multifaceted arena demands a unified organizational framework, a comprehensive guide that can seamlessly bridge the gap between theory and practical application. Without such a resource, scholars may struggle to harness the full potential of computer modeling, leaving critical questions unanswered and innovative solutions undiscovered. Deterministic and Stochastic Approaches in Computer Modeling and Simulation serves as the definitive solution to the complex problem scholars encounter. By presenting a comprehensive and unified organizational approach, this book empowers academics to conquer the challenges of computer modeling with confidence. It not only provides a classification of modeling methods but also offers a formalized, step-by-step approach to conducting model investigations, starting from defining objectives to analyzing experimental results. For academic scholars seeking a holistic understanding of computer modeling, this book is the ultimate solution. It caters to the diverse needs of scholars by addressing both deterministic and stochastic approaches. Through its structured chapters, it guides readers from the very basics of computer systems investigation to advanced topics like stochastic analytical modeling and statistical modeling.

2013-10-24 Jürgen Reichardt Die Hardwarebeschreibungssprache VHDL (Very High Speed Integrated Circuit Description Language) dient dem Entwurf der Hardwarekomponenten für komplexe Computer- und Consumer-Anwendungen. In diesem Lehrbuch wird, immer vor dem Hintergrund der Digitaltechnik, eine Einführung in Grundkonzepte aber auch detaillierter Einblick in die konkrete Synthese anhand von Beispielen gegeben. Inhaltliche Neuerungen der 6. Auflage: Durchgängige Verwendung des IEEE-Standards zur VHDL-Arithmetik Auf vielfachen Wunsch der Leser: Ergänzung um einen Abschnitt zum VHDL-Entwurf von Testbenches Ergänzung des Kapitels "FIR-Filter" um die Modellierung systolischer FIR- Filter Erweiterung um ein neues Kapitel zur VHDL Implementierung der numerischen Integration. Dieser Abschnitt ermöglicht die Hardware-Modellierung nichtlinearer Systeme, z.B. in der Regelungstechnik.