A Simulation Analysis of Phase Processing Circuitry in the Ohio University Omega Receiver Prototype

Richard A. Palkovic 1975

Molecular Kinetics in Condensed Phases

Ron Elber 2020-01-28 A guide to the theoretical and computational toolkits for the modern study of molecular kinetics in condensed phases
Condensed Phases: Theory, Simulation and Analysis puts the focus on the theory, algorithms, simulations methods and analysis of molecular kinetics in condensed phases. The authors - noted experts on the topic - offer a detailed and thorough description of modern theories and simulation methods to model molecular events. They highlight the rigorous stochastic modelling of molecular processes and the use of mathematical models to reproduce experimental observations, such as rate coefficients, mean first passage times and transition path times. The book’s exploration of simulations examines atomically detailed modelling of molecules in action and the connections of these simulations to theory and experiment. The authors also explore the applications that range from simple intuitive examples of one- and two-dimensional systems to complex solvated macromolecules. This important book: Offers an introduction to the topic that combines theory, simulation and analysis Presents a guide.

written by authors that are well-known and highly regarded leaders in their fields Contains detailed examples and explanation of how to conduct computer simulations of kinetics. A detailed study of a two-dimensional system and of a solvated peptide are discussed. Discusses modern developments in the field and explains their connection to the more traditional concepts in chemical dynamics Written for students and academic researchers in the fields of chemical kinetics, chemistry, computational statistical mechanics, biophysics and computational biology, Molecular Kinetics in Condensed Phases is the authoritative guide to the theoretical and computational toolkits for the study of molecular kinetics in condensed phases.

Analysis and Simulation of Phase-locked Loops-Ahmad Bekir 1996

Simulation Analysis of an FM Communication System
with a Phase-locked Loop Discriminator Operating in the Presence of Gaussian Noise and Impulse Noise-Jon Timothy Davis 1986

Noise-Shaping All-Digital Phase-Locked Loops-Francesco Brandonisio 2013-12-17 This book presents a novel approach to the analysis and design of all-digital phase-locked loops (ADPLLs), technology widely used in wireless communication devices. The authors provide an overview of ADPLL architectures, time-to-digital converters (TDCs) and noise shaping. Realistic examples illustrate how to analyze and simulate phase noise in the presence of sigma-delta modulation and time-to-digital conversion. Readers will gain a deep understanding of ADPLLs and the central role played by noise-shaping. A range of ADPLL and TDC architectures are presented in unified manner. Analytical and simulation tools are discussed in detail. Matlab code is included that can be reused to design, simulate and analyze the ADPLL architectures that are presented in the book.

Modeling and Simulation in Engineering Sciences-Noreen Sher Akbar 2016-08-31 This book features state-of-the-art contributions in mathematical, experimental and numerical simulations in engineering sciences. The contributions in this book, which comprise twelve chapters, are organized in six sections spanning mechanical, aerospace, electrical, electronic, computer, materials, geotechnical and chemical engineering. Topics include metal micro-forming, compressible reactive flows, radio frequency circuits, barrier infrared detectors, fiber Bragg and long-period fiber gratings, semiconductor modelling, many-core architecture computers, laser processing of materials, alloy phase decomposition, nanofluids, geo-materials and rheo-kinetics. Contributors are from Europe, China, Mexico, Malaysia and Iran. The chapters feature many sophisticated approaches including Monte Carlo simulation, FLUENT and
ABAQUS computational modelling, discrete element modelling and partitioned frequency-time methods. The book will be of interest to researchers and also consultants engaged in many areas of engineering simulation.

Analysis and Computer Simulation of a Digital Phase-locked Loop - Vo Van Chin 1973

RADAR ANALYSIS OF THE MOON. PHASE U: FEASIBILITY OF LABORATORY SIMULATION. - 1962

Technical Memorandum - James T. Brock 1994

A Simulation Analysis of Errors in the Measurement of Standard Electrochemical Rate Constants from Phase-Selective Impedance Data - D. F. Milner 1987 A digital simulation analysis is presented of the coupled effects of solution resistance and lock in amplifier damping upon the evaluation of standard rate constants for rapid electrode reactions using phase-selective AC impedance measurements with positive-feedback iR compensation. These two effects combine so to yield apparent (i.e. measured) rate constants, evaluated using the conventional frequency-dependent analysis that are generally smaller than the actual values. The extent to which these systematic errors depend on experimental conditions is explored for various values the uncompensated and specific solution resistances, the amplifier filter time constant, the double layer capacitance and other relevant parameters. A simple scheme employing these simulations is outlined by which the actual values can be extracted from apparent measurements. Some experimental verification of these effects is also presented.

Computer Simulation Analysis of Biological and
Agricultural Systems-
Barney K. Huang 1994-03-22
Computer Simulation Analysis of Biological and Agricultural Systems focuses on the integration of mathematical models and the dynamic simulation essential to system analysis, design, and synthesis. The book emphasizes the quantitative dynamic relationships between elements and system responses. Problems of various degrees of difficulty and complexity are discussed to illustrate methods of computer-aided design and analysis that can bridge the gap between theories and applications. These problems cover a wide variety of subjects in the biological and agricultural fields. Specific guidelines and practical methods for defining requirements, developing specifications, and integrating system modeling early in simulation development are included as well. Computer Simulation Analysis of Biological and Agricultural Systems is an excellent text and self-guide for agricultural engineers, agronomists, foresters, horticulturists, soil scientists, mechanical engineers, and computer simulators.

Shuttle Fleet Operations-
David Leinweber 1984
This Note documents a two-part analysis of the reliability of the Space Transportation System (STS). The first part is a strictly statistical examination of the inherent bounds on reliability prediction based on accumulated mission experience as the shuttle program evolves. The results of this analysis suggest that it will take a long history of successes to firmly establish a high shuttle reliability, and that therefore, some contingency provisions should be retained during the early part of the program at least. The second phase of the analysis is aimed at gaining some insight into the operational consequences of less than perfect reliability. This analysis suggests that the risks from the uncertainties surrounding loss or retirement of orbiters, stand-down periods, and delays in refurbishment and turnaround can be reduced by supplementing the four-
orbiter STS fleet with additional orbiters or an alternative launch system. Additional keywords: Space missions, Launch vehicles, Statistical analysis, Computations, Confidence intervals, Computerized simulation, Statistical bounds.

Analysis of the Simulation of Single Phase Flow Through a Naturally Fractured Reservoir-University of Minnesota. Institute for Mathematics and Its Applications 1987

Performance Simulation and Prediction- 1979
Computational procedures useful during the passive solar design process are discussed. Analysis tools are described suitable for each of the three phases of design: rules of thumb for the concept development phase, quick-and-dirty techniques for the design development phase, and the monthly solar load ratio method for the final design phase. Issues are discussed regarding the role of simulation analysis during the design process.

A Circuit Theoretic Analysis of Phase Noise in Oscillators-Andrew Buschmeier 2007
Oscillator phase noise can be viewed as an equivalent fluctuation of the oscillator's center frequency. The center frequency is dependent upon the value of the components comprising the oscillator. I propose an approach to determining phase noise which models circuit noise via time varying components whose values necessarily result in a time varying center frequency. This is achieved through the use of the substitution theorem from circuit theory and allows a circuit-theoretic approach to phase noise analysis not presented elsewhere. Not only is this an intuitively interesting alternate approach, but it also promises to unify classic circuit analysis and simulation techniques with the analysis of phase noise. Furthermore, the analysis is numerically well-behaved near the oscillation frequency and utilizes back-
substitution through LU decomposition to avoid the inversion of singular matrices. The analysis is applied to several examples and the results are supported by SpectreRF simulations. The analysis is extended to a nonlinear description of oscillator phase and applied to injection locking where the criteria for locking derived in literature is reproduced.

A Digital Computer Simulation and Analysis of a Phase-locked-loop Employing a Sawtooth Comparator - Joseph R. Leonardi 1968

Numerical Simulation of Multiphase Reactors with Continuous Liquid Phase - Chao Yang 2014-09-04
Numerical simulation of multiphase reactors with continuous liquid phase provides current research and findings in multiphase problems, which will assist researchers and engineers to advance this field. This is an ideal reference book for readers who are interested in design and scale-up of multiphase reactors and crystallizers, and using mathematical model and numerical simulation as tools. Yang and Mao’s book focuses on modeling and numerical applications directly in the chemical, petrochemical, and hydrometallurgical industries, rather than theories of multiphase flow. The content will help you to solve reacting flow problems and/or system design/optimization problems. The fundamentals and principles of flow and mass transfer in multiphase reactors with continuous liquid phase are covered, which will aid the reader’s understanding of multiphase reaction engineering.

Provides practical applications for using multiphase stirred tanks, reactors, and microreactors, with detailed explanation of investigation methods. Presents the most recent research efforts in this highly active field on multiphase reactors and crystallizers. Covers mathematical models, numerical methods and experimental techniques for multiphase flow and mass transfer in reactors and
crystallizers.

Use of Communication System Simulation and Analysis Package for Modeling Phase Shift Keying Modulation-Matthew A. Gray 1993

Traffic Signal Phase Truncation in the Event of Traffic Flow Restriction-2005 This thesis presents a proposed improvement to traffic signal controller logic. The concept consists of truncating a phase on which there is demand but zero or minimal flow due to a restriction of traffic. The logic presented in this thesis recognizes such a flow restriction and, consequently, terminates the phase in favor of a conflicting call for service. The theory of the concept is addressed and methods of implementation are explored. An experimental analysis was conducted in order to qualify the benefit of the phase truncation concept. This analysis was conducted using the VISSIM simulation software in conjunction with a hardware-in-the-loop configuration. This permitted the simulation to be run using an actual traffic signal controller. The simulation analysis was conducted using an eight-phase actuated intersection. Based upon the results of this analysis, it was concluded that the phase truncation concept could result in reduced vehicle delay.

Analysis and Simulation of Stepping Motor Systems Using a Phase Plane Approach-Raymond Gerard Gauthier 1979

Federal Income Taxation of Life Insurance Companies-Andrew Franklin Whitman 1966

Basic Simulation Models of Phase Tracking Devices Using MATLAB-William Tranter 2010 The purpose of this Synthesis Lecture is to provide basic theoretical analyses of Phase-Locked Loop (PLL) and devices derived from the PLL and
their simulation models suitable for supplementing undergraduate and graduate courses in communications and for self study by practicing engineers. A significant component of this book is a set of basic MATLAB-based simulations that illustrate the operating characteristics of these devices and enable the reader to investigate the impact of varying system parameters. This Synthesis Lecture by no means provides a comprehensive treatment of the underlying theory of phase-locked loops. There are many excellent books currently available that treat this subject in considerable technical depth. In this treatment, however, theoretical analyses are provided in sufficient detail in order to explain how simulations are developed.

Table of Contents:
Introduction / The Phase-Locked Loop / Devices Derived from the Phase-Locked Loop / Noise Performance Analysis / Simulation Models / MATLAB Simulations / Appendix A: Complex Envelope Repressions of Bandpass Signals / Appendix B: Phase Detector and VCO Models / Appendix C: Discrete-Time Approximations to Continuous-Time Integration / Appendix D: Simulation Code for the Basic PLL / Appendix E: SIMULINK Models / Appendix F: MATLAB m-files

Design and Analysis of Simulation Experiments-
Jack P.C. Kleijnen 2015-07-01
This is a new edition of Kleijnen’s advanced expository book on statistical methods for the Design and Analysis of Simulation Experiments (DASE).
Altogether, this new edition has approximately 50% new material not in the original book. More specifically, the author has made significant changes to the book’s organization, including placing the chapter on Screening Designs immediately after the chapters on Classic Designs, and reversing the order of the chapters on Simulation Optimization and Kriging Metamodels. The latter two chapters reflect how active the research has been in these areas. The validation
section has been moved into the chapter on Classic Assumptions versus Simulation Practice, and the chapter on Screening now has a section on selecting the number of replications in sequential bifurcation through Wald’s sequential probability ration test, as well as a section on sequential bifurcation for multiple types of simulation responses. Whereas all references in the original edition were placed at the end of the book, in this edition references are placed at the end of each chapter.


Phase Plane Analysis in the Computer Simulation Process on Bioelectrode Polarization Phenomena- Xiang Wang 1986

Automata-Alan Calvitti 2011-11

Enabling a Simulation Capability in the Organisation-Andrew Greasley 2008-05-07 This book addresses the application of simulation modelling techniques in order to enable better informed decisions in business and industrial organisations. The book’s unique approach treats simulation not just as a technical tool, but as a support for organisational decision making, showing the results from a survey of current and potential users of simulation to suggest reasons why the technique is not used as much as it should be and what are the barriers to its further use.

Phase Locking in Coupled Oscillators as Hybrid

Switched Reluctance Motor Drives-R. Krishnan 2017-12-19 The switched reluctance machine (SRM) is the least expensive electrical machine to produce, yet one of the most reliable. As such, research has blossomed during the last decade, and
the SRM and variable drive systems using SRMs are receiving considerable attention from industry. Because they require a power electronic converter and controller to function, however, successful realization of an SRM variable drive system demands an understanding of the converter and controller subsystems and their integration with the machine. Switched Reluctance Motor Drives provides that understanding. It presents a unified view of the machine and its drive system from all of its system and subsystem aspects. With a careful balance of theory and implementation, the author develops the analysis and design of SRMs from first principles, introduces a wide variety of power converters available for driving the SRM, and systematically presents both low- and high-performance controllers. The book includes an in-depth study of acoustic noise and its minimization along with application examples that include comparisons between ac and dc drives and SRM drive. The result is the first book that provides a state-of-the-art knowledge of SRMs, power converters, and their use with both sensor-based and sensorless controllers. Switched Reluctance Motor Drives enables both students and engineers to learn all aspects of SRM drive systems and appreciate the interdependence of the various subsystems in performance optimization.

Analog Computer Simulation and Phase Plane Analysis of Autonomous Nonlinear Second-order Systems - William Thornton 1965

Simulation Framework for Rapid Entry, Descent, and Landing Analysis, Phase 2 Results - Nasa Technical Reports Server (Ntrs) 2013-06
The NASA Engineering and Safety Center (NESC) was requested to establish the Simulation Framework for Rapid Entry, Descent, and Landing (EDL) Analysis assessment, which involved development of an enhanced simulation architecture using
the Program to Optimize Simulated Trajectories II simulation tool. The assessment was requested to enhance the capability of the Agency to provide rapid evaluation of EDL characteristics in systems analysis studies, preliminary design, mission development and execution, and time-critical assessments. Many of the new simulation framework capabilities were developed to support the Agency EDL-Systems Analysis (SA) team that is conducting studies of the technologies and architectures that are required to enable human and higher mass robotic missions to Mars. The findings, observations, and recommendations from the NESC are provided in this report.

A Simulation Analysis of the Economic Consequences of Establishing Multi-modal Transportation Companies—Robert S. Tripp 1972

Moon—Frank E. Kinsman 1962

Analysis and Control of Electric Drives—Ned Mohan 2020-08-27 A guide to drives essential to electric vehicles, wind turbines, and other motor-driven systems Analysis and Control of Electric Drives is a practical and comprehensive text that offers a clear understanding of electric drives and their industrial applications in the real-world including electric vehicles and wind turbines. The authors—noted experts on the topic—review the basic knowledge needed to understand electric drives and include the pertinent material that examines DC and AC machines in steady state using a unique physics-based approach. The book also analyzes electric machine operation under dynamic conditions, assisted by Space Vectors. The book is filled with illustrative examples and includes information on electric machines with Interior Permanent Magnets. To enhance learning, the book contains end-of-chapter problems and all topics.
covered use computer simulations with MATLAB Simulink® and Sciamble® Workbench software that is available free online for educational purposes. This important book: Explores additional topics such as electric machines with Interior Permanent Magnets Includes multiple examples and end-of-chapter homework problems Provides simulations made using MATLAB Simulink® and Sciamble® Workbench, free software for educational purposes Contains helpful presentation slides and Solutions Manual for Instructors; simulation files are available on the associated website for easy implementation A unique feature of this book is that the simulations in Sciamble® Workbench software can seamlessly be used to control experiments in a hardware laboratory. Written for undergraduate and graduate students, Analysis and Control of Electric Drives is an essential guide to understanding electric vehicles, wind turbines, and increased efficiency of motor-driven systems.

A Simulation Analysis of Interference Induced by a Frequency Hopping Signal to an FM Signal-Ghulam H. Raz 1992

Discrete Event Simulations-Elaid Wee Chuan Lim 2012 The Discrete Event Simulation (DES) method has received widespread attention and acceptance by both researchers and practitioners in recent years. The range of application of DES spans across many different disciplines and research fields. In research, further development and advancements of the basic DES algorithm continue to be sought while various hybrid methods derived by combining DES with other simulation techniques continue to be developed. This book presents state-of-the-art contributions on fundamental development of the DES method, novel integration of the method with other modeling techniques as well as applications towards simulating and analyzing the
performances of various types of systems. This book will be of interest to undergraduate and graduate students, researchers as well as professionals who are actively engaged in DES related work.

Service Fatigue Loads Monitoring, Simulation, and Analysis-P. R. Abelkis 1979-01-01

Analysis and Simulation of a New Multi-Component Two-Phase Flow Model with Phase Transitions and Chemical Reactions-Maren Hantke 2017

Simulation Strategies to Reduce Recidivism-Faye S. Taxman 2013-06-05 The use of simulation modeling in criminal justice dates back to the 1970s. Early models were developed to capture the realities of the criminal justice system, to identify what changes were needed, and how small changes would affect the overall picture. Significant time and effort were devoted to these projects and although they achieved some success, the complex nature of the criminal justice system and the difficulties associated with improving and maintaining the models prohibited wide spread adoption in the field. Some of the problems with early simulation projects were the lack of data to validate models, the lack of technical skills needed by staff to design and build the models, and the technical difficulties with software programming to transform models into computerized representations. As simulation modeling has becoming a more popular technique across many disciplines, and technology as well as the technical skills of researchers has improved, this book revisits the concept of simulation modeling with new applications for the criminal justice system. The wider availability of data has made for more opportunity to verify and validate models; computing software has become more available and easier to use; and the capacity for visualization and communication of models shows promise for the future.
of simulation in criminal justice. The time has come to examine the past, present, and future contributions of simulation modeling to the field of criminal justice. This work provides a central resource of information for the current state of simulation modeling, and overview of existing techniques and cases of success, and directions for future development. This work will be an important resource for researchers in criminal justice and related fields, as well as those studying policy-related topics.


Conceptual Modeling for Discrete-Event Simulation-Stewart Robinson 2010-08-02 Bringing together an international group of researchers involved in military, business, and health modeling and simulation, Conceptual Modeling for Discrete-Event Simulation presents a comprehensive view of the current state of the art in the field. The book addresses a host of issues, including: What is a conceptual model? How is conceptual modeling performed in general and in specific modeling domains? What is the role of established approaches in conceptual modeling? Each of the book’s six parts focuses on a different aspect of conceptual modeling for simulation. The first section discusses the purpose and requirements of a conceptual model. The next set of chapters provides frameworks and tools for conceptual modeling. The book then describes the use of soft systems methodology for model structuring as well as the application of software engineering methods and tools for model specification. After illustrating how conceptual modeling is adopted in the military and semiconductor manufacturing, the book concludes with a discussion on future research directions. This volume offers a broad, multifaceted account of the field by presenting diverse perspectives on what
conceptual modeling entails. It also provides a basis upon which these perspectives can be compared.

**Analysis, Modeling and Simulation of Multiscale Problems** - Alexander Mielke
2006-10-14 This book reports recent mathematical developments in the Programme "Analysis, Modeling and Simulation of Multiscale Problems", which started as a German research initiative in 2006. Multiscale problems occur in many fields of science, such as microstructures in materials, sharp-interface models, many-particle systems and motions on different spatial and temporal scales in quantum mechanics or in molecular dynamics. The book presents current mathematical foundations of modeling, and proposes efficient numerical treatment.