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Paraxial Solutions for Decelerated Axially Symmetric Space Charge Flow **Applied Mechanics Reviews** Nuclear Science Abstracts Space Station Systems International Symposium on Optimum Structural Design, October 19-22, 1981, Tucson, Arizona Polynomial Methods in Optimal Control and Filtering **Air Force Magazine** Large Space Structures & Systems in the Space Station Era Aerospace Robotics II **Nuclear rocket (Rover); space electric power; physical research; raw materials; isotopes development; biology and medicine; Plowshare; special nucear materials; community; program direction and administration; training, education, and information; and weapons** **Nuclear Science Abstracts** **Triangulation of Multistation Camera Data to Locate a Curved Line in Space** **Army** Crop Production for Advanced Life Support Systems - Observations From the Kennedy Space Center Breadboard Project **Large Space Structures & Systems in the Space Station Era** Scientific and Technical Aerospace Reports **Infrared Space Interferometry: Astrophysics & the Study of Earth-Like Planets** **EDRA40 Robust Industrial Control Systems** *Comparing Political Communication across Time and Space* **Monthly Catalog of United States Government Publications** **Principles of Knowledge Representation and Reasoning** Organic Matter in Space (IAU S251) Intense Microwave and Particle Beams **Smoothing, Filtering and Prediction** **NASA's University Program** **European Control Conference 1995** **Department of the Interior and Related Agencies Appropriations for Fiscal Year 1982** **Relativistic Gravitational Experiments in Space** Selected Water Resources Abstracts Control and Estimation of Systems with Input/Output Delays *The Advertising Red Books* *Hydroponic Solutions* Event Solutions *Reactor Technology* **Optical Approaches to Capture Plant Dynamics in Time, Space, and Across Scales** *Life in the Universe, 5th Edition* **North American Space Directory** **Computerworld** **Technology for Large Space Systems**

Army Oct 17 2021

Robust Industrial Control Systems Apr 11 2021 Robust Industrial Control Systems: Optimal Design Approach for Polynomial Systems presents a comprehensive introduction to the use of frequency domain and polynomial system design techniques for a range of industrial control and signal processing applications. The solution of stochastic and robust optimal control problems is considered, building up from single-input problems and gradually developing the results for multivariable design of the later chapters. In addition to cataloguing many of the results in polynomial systems needed to calculate industrial controllers and filters, basic design procedures are also introduced which enable cost functions and system descriptions to be specified in order to satisfy industrial requirements. Providing a range of solutions to control and signal processing problems, this book: * Presents a comprehensive introduction to the polynomial systems approach for the solution of H_2 and H_infinity optimal control problems. * Develops robust control design procedures using frequency domain methods. * Demonstrates design examples for gas turbines, marine systems, metal processing, flight control, wind turbines, process control and manufacturing systems. * Includes the analysis of multi-degrees of freedom controllers and the computation of restricted structure controllers that are simple to implement. * Considers time-varying control and signal processing problems. * Addresses the control of non-linear processes using both multiple model concepts and new optimal control solutions. Robust Industrial Control Systems: Optimal Design Approach for Polynomial Systems is essential reading for professional engineers requiring an introduction to optimal control theory and insights into its use in the design of real industrial processes. Students and researchers in the field will also find it an excellent reference tool.

The Advertising Red Books Feb 27 2020

Nuclear Science Abstracts Aug 27 2022

Paraxial Solutions for Decelerated Axially Symmetric Space Charge Flow Oct 29 2022 Solutions for space-charge-flow based on the well known axially symmetric paraxial approximation are presented. This permits, under a unified heading, some new solutions plus restatements and extensions of results previously appearing in separate contexts. In addition to the well known Universal Beam Spread Curve, solutions for linear, parabolic, and sinusoidal axial potential variations are obtained. The axial potential variation is solved for producing specified hyperbolic and parabolic beam trajectories. Following the trajectories and axial potentials obtained from the paraxial ray equation, representative approximate solutions are presented for the potentials within and outside the beam. These are obtained over limited regions by use of series expansions similar to those used in obtaining the paraxial approximation. The scale of the potential variations and trajectories were chosen primarily to show beam spreading in cases for which the space-charge forces are important and the beam potential is significantly depressed. This study had as a background the investigation of the axially symmetric depressed collector. (Author).

Hydroponic Solutions Jan 28 2020 Questions and answers about hydroponic gardening.

Optical Approaches to Capture Plant Dynamics in Time, Space, and Across Scales Oct 25 2019 Quantifying temporal changes in plant geometry as a result of genetic, developmental, or environmental causes is essential to improve our understanding of the structure and function relationships in plants. Over the last decades, optical imaging and remote sensing developed fundamental working tools to monitor and quantify our environment and plants in particular. Increased efficiency of methods lowered the barrier to compare, integrate, and interpret the optically obtained plant data across larger spatial scales and across scales of biological organization. In particular, acquisition speed at high resolutions reached levels that allow capturing the temporal dynamics in plants in three dimensions along with multi-spectral information beyond human visual senses. These advanced imaging capabilities have proven to be essential to detect and focus on analyzing temporal dynamics of plant geometries. The focus of this Research Topic is on optical techniques developed to study geometrical changes at the plant level detected within the wavelength spectrum between near-UV to near infrared. Such techniques typically involve photogrammetric, LiDAR, or imaging spectroscopy approaches but are not exclusively restricted to these. Instruments operating within this range of wavelengths allow capturing a wide range of temporal scales ranging from sub-second to seasonal changes that result from plant development, environmental effects like wind and heat, or genetically controlled adaption to environmental conditions. The Research Topic covered a plethora of methodological approaches as suggestions for best practices in the light of a particular research question and to a wider view to different research disciplines and how they utilize their state-of-the-art techniques in demonstrating potential use cases across different scales.

Principles of Knowledge Representation and Reasoning Jan 08 2021

NASA's University Program Sep 04 2020

European Control Conference 1995 Aug 03 2020 Proceedings of the European Control Conference 1995, Rome, Italy 5-8 September 1995

Monthly Catalog of United States Government Publications Feb 09 2021

Reactor Technology Nov 25 2019

Nuclear Science Abstracts Dec 19 2021

Control and Estimation of Systems with Input/Output Delays Mar 30 2020 Time delays exist in many engineering systems such as transportation, communication, process engineering and networked control systems. In recent years, time delay systems have attracted recurring interests from research community. Much of the effort has been focused on stability analysis and stabilization of time delay systems using the so-called Lyapunov-Krasovskii functional together with a linear matrix inequality approach, which provides an efficient numerical tool for handling systems with delays in state and/or inputs. Recently, some more interesting and fundamental development for systems with input/output (i/o) delays has been made using time domain or frequency domain approaches. These approaches lead to analytical solutions to time delay problems in terms of Riccati equations or spectral factorizations. This monograph presents simple analytical solutions to control and estimation problems for systems with multiple i/o delays via elementary tools such as projection. We propose a re-organized innovation analysis approach for delay systems and establish a duality between optimal control of systems with multiple input delays and smoothing estimation for delay free systems. These appealing new techniques are applied to solve control and estimation problems for systems with multiple i/o delays and state delays under both the H2 and H-infinity performance criteria.

Scientific and Technical Aerospace Reports Jul 14 2021

Large Space Structures & Systems in the Space Station Era Aug 15 2021

Nuclear rocket (Rover); space electric power; physical research; raw materials; isotopes development; biology and medicine; Plowshare; special nucear materials; community; program direction and administration; training, education, and information; and weapons Jan 20 2022

International Symposium on Optimum Structural Design, October 19-22, 1981, Tucson, Arizona Jun 25 2022

Organic Matter in Space (IAU S251) Dec 07 2020 Review of current understanding of organic matter in space, identifying areas where new ideas are required to further our understanding.

Air Force Magazine Apr 23 2022

Life in the Universe, 5th Edition Sep 23 2019 The world's leading textbook on astrobiology—ideal for an introductory one-semester course and now fully revised and updated Are we alone in the cosmos? How are scientists seeking signs of life beyond our home planet? Could we colonize other planets, moons, or even other star systems? This introductory textbook, written by a team of four renowned science communicators, educators, and researchers, tells the amazing story of how modern science is seeking the answers to these and other fascinating questions. They are the questions that are at the heart of the highly interdisciplinary field of astrobiology, the study of life in the universe. Written in an accessible, conversational style for anyone intrigued by the possibilities of life in the solar system and beyond, Life in the Universe is an ideal place to start learning about the latest discoveries and unsolved mysteries in the field. From the most recent missions to Saturn's moons and our neighboring planet Mars to revolutionary discoveries of thousands of exoplanets, from the puzzle of life's beginning on Earth to the latest efforts in the search for intelligent life elsewhere, this book captures the imagination and enriches the reader's understanding of how astronomers, planetary scientists, biologists, and other scientists make progress at the cutting edge of this dynamic field. Enriched with a wealth of engaging features, this textbook brings any citizen of the cosmos up to speed with the scientific quest to discover whether we are alone or part of a universe full of life. An acclaimed text designed to inspire students of all backgrounds to explore foundational questions about life in the cosmos Completely revised and updated to include the latest developments in the field, including recent exploratory space missions to Mars, frontier exoplanet science, research on the origin of life on Earth, and more Enriched with helpful learning aids, including in-chapter Think about It questions, optional Do the Math and Special Topic boxes, Movie Madness boxes, end-of-chapter exercises and problems, quick quizzes, and much more Supported by instructor's resources, including an illustration package and test bank, available upon request

Crop Production for Advanced Life Support Systems - Observations From the Kennedy Space Center Breadboard Project Sep 16 2021

Computerworld Jul 22 2019 For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

Infrared Space Interferometry: Astrophysics & the Study of Earth-Like Planets Jun 13 2021 The past year has produced some of the most exciting results in the history of astronomy, particularly in the area of planets outside our solar system. Only a half-year before our meeting in Toledo, Spain, the first unambiguous detection of planet-sized masses orbiting main sequence stars were reported. Since that time, evidence for a new exo planet has been reported almost at the rate of about once per month. Some of these objects are likely to turn out to be very low-mass stars, but something like half show characteristics - Jupiter-like mass and near-zero orbital eccentricity - which appear to be unique to planets. Almost at the same time that

giant planets were being discovered regularly, the two major space agencies, ESA and NASA, have iden tified searches for and detailed study of Earth-like planets as a major priority for the future. In ESA's "Horizon 2000 Plus" programme, an infrared interferometer has been proposed as a possible future Cor nerstone mission. Similarly, scientists in the US produced the "Road Map for the Exploration of Neighboring Planetary Systems (ExNPS)", which provided NASA with a long-term plan which leads also to an infrared interferometer in space to study hypothetical Earth-like worlds beyond our Solar System. Such an observatory is designed to search for the thermal emission from a family of planets, using interferometric nulling to remove the contaminating light from the central star.

Event Solutions Dec 27 2019

Intense Microwave and Particle Beams Nov 06 2020

North American Space Directory Aug 23 2019

Triangulation of Multistation Camera Data to Locate a Curved Line in Space Nov 18 2021

Large Space Structures & Systems in the Space Station Era Mar 22 2022

Department of the Interior and Related Agencies Appropriations for Fiscal Year 1982 Jul 02 2020

Selected Water Resources Abstracts Apr 30 2020

Smoothing, Filtering and Prediction Oct 05 2020 This book describes the classical smoothing, filtering and prediction techniques together with some more recently developed embellishments for improving performance within applications. It aims to present the subject in an accessible way, so that it can serve as a practical guide for undergraduates and newcomers to the field. The material is organised as a ten-lecture course. The foundations are laid in Chapters 1 and 2, which explain minimum-mean-square-error solution construction and asymptotic behaviour. Chapters 3 and 4 introduce continuous-time and discrete-time minimum-variance filtering. Generalisations for missing data, deterministic inputs, correlated noises, direct feedthrough terms, output estimation and equalisation are described. Chapter 5 simplifies the minimum-variance filtering results for steady-state problems. Observability, Riccati equation solution convergence, asymptotic stability and Wiener filter equivalence are discussed. Chapters 6 and 7 cover the subject of continuous-time and discrete-time smoothing. The main fixed-lag, fixed-point and fixed-interval smoother results are derived. It is shown that the minimum-variance fixed-interval smoother attains the best performance. Chapter 8 attends to parameter estimation. As the above-mentioned approaches all rely on knowledge of the underlying model parameters, maximum-likelihood techniques within expectation-maximisation algorithms for joint state and parameter estimation are described. Chapter 9 is concerned with robust techniques that accommodate uncertainties within problem specifications. An extra term within Riccati equations enables designers to trade-off average error and peak error performance. Chapter 10 rounds off the course by applying the afore-mentioned linear techniques to nonlinear estimation problems. It is demonstrated that step-wise linearisations can be used within predictors, filters and smoothers, albeit by forsaking optimal performance guarantees.

Comparing Political Communication across Time and Space Mar 10 2021 By using a wide diversity of theoretical and methodological approaches and by encompassing both cross-national and longitudinal analyses, this volume sheds new light on comparative political communication research, such as personalization, globalization, democratization, and the changing nature of journalism,

Relativistic Gravitational Experiments in Space Jun 01 2020 Contents:Tests of Underlying Principles in Gravitational Physics and Their Theoretical RationaleFrameworks for Testing Gravitational Theories, Present Status of Theory Testing and Future ProspectsRotational Effects in General Relativity, Frame-Dragging and the Geodetic EffectExperiments and Theory of Gravitational RadiationAdvanced Technologies: Clocks, Drag-Free and Cryogenics in SpaceClassical GravityConsiderations in Spacecraft Design, Program Management and the Use of Columbus Space Station Readership: Physicists interested in relativity and astrophysicists. keywords:

Space Station Systems Jul 26 2022

EDRA40 May 12 2021

Technology for Large Space Systems Jun 20 2019

Polynomial Methods in Optimal Control and Filtering May 24 2022 This book aims to demonstrate the power and breadth of polynomial methods in control and filtering. Direct polynomial methods have previously received little attention compared with the alternative Wiener-Hopf transfer-function method and the statespace methods which rely on Riccati equations. The book provides a broad coverage of the polynomial equation approach in a range of linear control and filtering problems. The principal feature of the approach is the description of systems in fractional form using transfer functions. This representation leads quite naturally and directly to the parameterisation of all 'acceptable' feedback controllers for a given problem in the form of a Diophantine equation over polynomials. In the polynomial equation approach, this direct parameterisation is explicitly carried through to the synthesis of controllers and filters and, further, to the computer implementation of numerical algorithms. The book is likely to be of interest to students, researchers and engineers with some control and systems theory or signal processing background. It could be used as the basis of a graduate-level course in optimal control and filtering. The book proceeds from the necessary background material presented at a tutorial level, through recent theoretical and practical developments, to a detailed presentation of numerical algorithms.

Applied Mechanics Reviews Sep 28 2022

Aerospace Robotics II Feb 21 2022 This book presents a selection of conference contributions from CARO'13 (Conference on Aerospace Robotics), which was held in Warsaw from July 1 to 3, 2013. It presents the most important and crucial problems of space automation in context of future exploration programs. These programs could involve such issues as space situational awareness program, planetary protection, exploitation of minerals, assembly, manufacturing, and search for new habitable location for next human generations. The future exploration of Space and related activities will involve robots. In particular, new autonomous robots need to be developed with high degree of intelligence. Such robots would make space exploration possible but also they would make space automation an important factor in variety of activities related to Space.