

A Software Defined Gps And Galileo Receiver A Single Frequency Approach 1st Edition

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Navigation Signal Processing for GNSS Software Receivers - Thomas Pany 2010

The advancement of software radio technology has provided an opportunity for the design of performance-enhanced GNSS receivers that are more flexible and easier to develop than their FPGA or ASIC based counterparts. Filling a gap in the current literature on the subject, this highly practical resource offers you an in-depth understanding of navigation signal detection and estimation algorithms and their implementation in a software radio. This unique book focuses on high precision applications for GNSS signals and an innovative RTK receiver concept based on difference correlators. You learn how to develop navigation receivers for top performance using basic algorithms, like correlation and tracking, which can be understood on an intuitive level. Additionally, the book provides you with a theoretical framework for signal estimation and detection that gives you the knowledge you need to make performance assessments without building a receiver. The theoretical treatment also gives you hints for choosing optimal algorithms for your projects in the field.

[Advances in Evolutionary and Deterministic Methods for Design, Optimization and Control in Engineering and Sciences](#) - David Greiner
2014-11-14

This book contains state-of-the-art contributions in the field of evolutionary and deterministic methods for design, optimization and control in engineering and sciences. Specialists have

written each of the 34 chapters as extended versions of selected papers presented at the International Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control with Applications to Industrial and Societal Problems (EUROGEN 2013). The conference was one of the Thematic Conferences of the European Community on Computational Methods in Applied Sciences (ECCOMAS). Topics treated in the various chapters are classified in the following sections: theoretical and numerical methods and tools for optimization (theoretical methods and tools; numerical methods and tools) and engineering design and societal applications (turbo machinery; structures, materials and civil engineering; aeronautics and astronautics; societal applications; electrical and electronics applications), focused particularly on intelligent systems for multidisciplinary design optimization (mdo) problems based on multi-hybridized software, adjoint-based and one-shot methods, uncertainty quantification and optimization, multidisciplinary design optimization, applications of game theory to industrial optimization problems, applications in structural and civil engineering optimum design and surrogate models based optimization methods in aerodynamic design.

[Satellite Positioning](#) - Shuanggen Jin 2015-03-11
Satellite positioning techniques, particularly global navigation satellite systems (GNSS), are capable of measuring small changes of the Earth's shape and atmosphere, as well as surface

characteristics with an unprecedented accuracy. This book is devoted to presenting recent results and development in satellite positioning technique and applications, including GNSS positioning methods, models, atmospheric sounding, and reflectometry as well their applications in the atmosphere, land, oceans and cryosphere. This book provides a good reference for satellite positioning techniques, engineers, scientists as well as user community.

GPS, GLONASS, Galileo, and BeiDou for Mobile Devices - Ivan G. Petrovski 2014-05-15

Get up to speed on GNSS for mobile applications with this practical guide, including step-by-step algorithms and key methods for future systems. Fundamentals of Global Positioning System Receivers - James Bao-Yen Tsui 2005-01-03 All the expert guidance you need to understand, build, and operate GPS receivers The Second Edition of this acclaimed publication enables readers to understand and apply the complex operation principles of global positioning system (GPS) receivers. Although GPS receivers are widely used in everyday life to aid in positioning and navigation, this is the only text that is devoted to complete coverage of their operation principles. The author, one of the foremost authorities in the GPS field, presents the material from a software receiver viewpoint, an approach that helps readers better understand operation and that reflects the forecasted integration of GPS receivers into such everyday devices as cellular telephones. Concentrating on civilian C/A code, the book provides the tools and information needed to understand and exploit all aspects of receiver technology as well as relevant navigation schemes: Overview of GPS basics and the constellation of satellites that comprise the GPS system Detailed examination of GPS signal structure, acquisition, and tracking Step-by-step presentation of the mathematical formulas for calculating a user's position Demonstration of the use of computer programs to run key equations Instructions for developing hardware to collect digitized data for a software GPS receiver Complete chapter demonstrating a GPS receiver following a signal flow to determine a user's position The Second Edition of this highly acclaimed text has been greatly expanded, including three new chapters: Acquisition of weak signals Tracking of

weak signals GPS receiver related subjects Following the author's expert guidance and easy-to-follow style, engineers and scientists learn all that is needed to understand, build, and operate GPS receivers. The book's logical flow from basic concepts to applications makes it an excellent textbook for upper-level undergraduate and graduate students in electrical engineering, wireless communications, and computer science.

Position, Navigation, and Timing Technologies in the 21st Century, Volumes

1 and 2 - Y. Jade Morton 2020-12-17

Covers the latest developments in PNT technologies, including integrated satellite navigation, sensor systems, and civil applications Featuring sixty-four chapters that are divided into six parts, this two-volume work provides comprehensive coverage of the state-of-the-art in satellite-based position, navigation, and timing (PNT) technologies and civilian applications. It also examines alternative navigation technologies based on other signals-of-opportunity and sensors and offers a comprehensive treatment on integrated PNT systems for consumer and commercial applications. Volume 1 of Position, Navigation, and Timing Technologies in the 21st Century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications contains three parts and focuses on the satellite navigation systems, technologies, and engineering and scientific applications. It starts with a historical perspective of GPS development and other related PNT development. Current global and regional navigation satellite systems (GNSS and RNSS), their inter-operability, signal quality monitoring, satellite orbit and time synchronization, and ground- and satellite-based augmentation systems are examined. Recent progresses in satellite navigation receiver technologies and challenges for operations in multipath-rich urban environment, in handling spoofing and interference, and in ensuring PNT integrity are addressed. A section on satellite navigation for engineering and scientific applications finishes off the volume. Volume 2 of Position, Navigation, and Timing Technologies in the 21st Century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications consists of three parts and addresses PNT using alternative signals and sensors and integrated PNT technologies for

consumer and commercial applications. It looks at PNT using various radio signals-of-opportunity, atomic clock, optical, laser, magnetic field, celestial, MEMS and inertial sensors, as well as the concept of navigation from Low-Earth Orbiting (LEO) satellites. GNSS-INS integration, neuroscience of navigation, and animal navigation are also covered. The volume finishes off with a collection of work on contemporary PNT applications such as survey and mobile mapping, precision agriculture, wearable systems, automated driving, train control, commercial unmanned aircraft systems, aviation, and navigation in the unique Arctic environment. In addition, this text: Serves as a complete reference and handbook for professionals and students interested in the broad range of PNT subjects Includes chapters that focus on the latest developments in GNSS and other navigation sensors, techniques, and applications Illustrates interconnecting relationships between various types of technologies in order to assure more protected, tough, and accurate PNT Position, Navigation, and Timing Technologies in the 21st Century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications will appeal to all industry professionals, researchers, and academics involved with the science, engineering, and applications of position, navigation, and timing technologies.

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Manual of Digital Earth - Huadong Guo

2019-11-18

This open access book offers a summary of the development of Digital Earth over the past twenty years. By reviewing the initial vision of Digital Earth, the evolution of that vision, the relevant key technologies, and the role of Digital Earth in helping people respond to global challenges, this publication reveals how and why Digital Earth is becoming vital for acquiring, processing, analysing and mining the rapidly growing volume of global data sets about the Earth. The main aspects of Digital Earth covered here include: Digital Earth platforms, remote sensing and navigation satellites, processing and visualizing geospatial information, geospatial information infrastructures, big data and cloud computing, transformation and zooming, artificial intelligence, Internet of Things, and social media. Moreover, the book covers in detail the multi-

layered/multi-faceted roles of Digital Earth in response to sustainable development goals, climate changes, and mitigating disasters, the applications of Digital Earth (such as digital city and digital heritage), the citizen science in support of Digital Earth, the economic value of Digital Earth, and so on. This book also reviews the regional and national development of Digital Earth around the world, and discusses the role and effect of education and ethics. Lastly, it concludes with a summary of the challenges and forecasts the future trends of Digital Earth. By sharing case studies and a broad range of general and scientific insights into the science and technology of Digital Earth, this book offers an essential introduction for an ever-growing international audience.

GALILEO Positioning Technology - Jari Nurmi

2014-09-12

This book covers multi-band Galileo receivers (especially E1-E5 bands of Galileo) and addresses all receiver building blocks, from the antenna and front end, through details of the baseband receiver processing blocks, up to the navigation processing, including the Galileo message structure and Position, Velocity, Time (PVT) computation. Moreover, hybridization solutions with communications systems for improved localization are discussed and an open-source GNSS receiver platform (available for download) developed at Tampere University of Technology (TUT) is addressed in detail.

Geodetic Sciences - Shuanggen Jin 2013-05-29

Space geodetic techniques, e.g., global navigation satellite systems (GNSS), Very Long Baseline Interferometry (VLBI), satellite gravimetry and altimetry, and GNSS Reflectometry

R3 in Geomatics: Research, Results and Review -

Claudio Parente 2020-12-11

This book constitutes the refereed proceedings of the First International Workshop in memory of Prof. Raffaele Santamaria on R3 in Geomatics: Research, Results and Review, R3GEO 2019, held in Naples, Italy*, in October 2019. The 27 full papers along with the 2 short papers presented were carefully reviewed and selected from 39 submissions. The papers are organized in topical sections on: GNSS and geodesy; photogrammetry and laser scanning; GIS and remote sensing.

GNSS Applications and Methods - Scott

Gleason 2009

Placing emphasis on applications development, this unique resource offers a highly practical overview of GNSS (global navigation satellite systems), including GPS. The applications presented in the book range from the traditional location applications to combining GNSS with other sensors and systems and into more exotic areas, such as remote sensing and space weather monitoring. Written by leading experts in the field, this book presents the fundamental underpinnings of GNSS and provides you with detailed examples of various GNSS applications. Moreover, the software included with the book contains valuable processing tools and real GPS data sets to help you rapidly advance your own work in the field. You will find critical information and tools that help give you a head start to embark on future research and development projects.

Global Positioning System - Bradford W. Parkinson 1996

Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems, Second Edition - Paul D. Groves 2013-04-01

This newly revised and greatly expanded edition of the popular Artech House book *Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems* offers you a current and comprehensive understanding of satellite navigation, inertial navigation, terrestrial radio navigation, dead reckoning, and environmental feature matching. It provides both an introduction to navigation systems and an in-depth treatment of INS/GNSS and multisensor integration. The second edition offers a wealth of added and updated material, including a brand new chapter on the principles of radio positioning and a chapter devoted to important applications in the field. Other updates include expanded treatments of map matching, image-based navigation, attitude determination, acoustic positioning, pedestrian navigation, advanced GNSS techniques, and several terrestrial and short-range radio positioning technologies. The book shows you how satellite, inertial, and other navigation technologies work, and focuses on processing chains and error sources. In addition, you get a clear introduction to coordinate frames, multi-frame kinematics, Earth models, gravity,

Kalman filtering, and nonlinear filtering. Providing solutions to common integration problems, the book describes and compares different integration architectures, and explains how to model different error sources. You get a broad and penetrating overview of current technology and are brought up to speed with the latest developments in the field, including context-dependent and cooperative positioning.

Image and Signal Processing - Abderrahim Elmoataz 2012-07-04

This book constitutes the refereed proceedings of the 5th International Conference on Image and Signal Processing, ICISP 2012, held in Agadir, Morocco, in June 2012. The 75 revised full papers presented were carefully reviewed and selected from 158 submissions. The contributions are grouped into the following topical sections: multi/hyperspectral imaging; image itering and coding; signal processing; biometric; watermarking and texture; segmentation and retrieval; image processing; pattern recognition.

The Interoperable Global Navigation Satellite Systems Space Service Volume - United Nations. Office for Outer Space Affairs 2022-01-07

Global navigation satellite systems (GNSS), which were originally designed to provide positioning, velocity, and timing services for terrestrial users, are now increasingly utilized for autonomous navigation in space as well.

A Software-Defined GPS and Galileo Receiver - Kai Borre 2007-08-03

This book explore the use of new technologies in the area of satellite navigation receivers. In order to construct a reconfigurable receiver with a wide range of applications, the authors discuss receiver architecture based on software-defined radio techniques. The presentation unfolds in a user-friendly style and goes from the basics to cutting-edge research. The book is aimed at applied mathematicians, electrical engineers, geodesists, and graduate students. It may be used as a textbook in various GPS technology and signal processing courses, or as a self-study reference for anyone working with satellite navigation receivers.

Linear Algebra, Geodesy, and GPS - Gilbert Strang 1997-01-01

Discusses algorithms generally expressed in MATLAB for geodesy and global positioning.

Three parts cover basic linear algebra, the application to the (linear and also nonlinear) science of measurement, and the GPS system and its applications. A popular article from SIAM News (June 1997) The Mathematics of GPS is included as an introduction. Annot

GPS for Land Surveyors, Third Edition - Jan Van Sickle 2001-03-01

The GPS Signal - Biases and Solutions - The Framework - Receivers and Methods - Coordinates - Planning a Survey - Observing - Postprocessing - RTK and DGPS.

Multifunctional Operation and Application of GPS - Rustam B. Rustamov 2018-05-30

Today, Global Positioning System (GPS) has taken a significant place in human life with wide-scale applications. It is a multi-use, space-based radio-navigation system, embracing defense and security, civil, commercial, and scientific research needs. Taking into account the importance of the system, it has been suggested to present current advances of GPS with attention focused on vital aspects of technology. This book provides a general description of GPS, GNSS, and GLONASS with reference to the improvement of characteristics of the segments, including software applications and the equipment itself containing GPS. The book also provides information on application areas. Equally, a number of common shortcomings and errors are described, and elimination and minimization of such consequences are demonstrated.

Understanding GPS - Elliott D. Kaplan 2006

Appendix B: Stability Measures for Frequency Sources 665
Appendix C: Free-Space Propagation Loss 669;
About the Authors 675; Index 683;
Mobile Communications Library.

GNSS - Global Navigation Satellite Systems

- Bernhard Hofmann-Wellenhof 2007-11-20

This book extends the scientific bestseller "GPS - Theory and Practice" to cover Global Navigation Satellite Systems (GNSS) and includes the Russian GLONASS, the European system Galileo, and additional systems. The book refers to GNSS in the generic sense to describe the various existing reference systems for coordinates and time, the satellite orbits, the satellite signals, observables, mathematical models for positioning, data processing, and data transformation. This book is a university-level

introductory textbook and is intended to serve as a reference for students as well as for professionals and scientists in the fields of geodesy, surveying engineering, navigation, and related disciplines.

Implementing Software Defined Radio - Eugene Grayver 2012-07-20

Software Defined Radio makes wireless communications easier, more efficient, and more reliable. This book bridges the gap between academic research and practical implementation. When beginning a project, practicing engineers, technical managers, and graduate students can save countless hours by considering the concepts presented in these pages. The author covers the myriad options and trade-offs available when selecting an appropriate hardware architecture. As demonstrated here, the choice between hardware- and software-centric architecture can mean the difference between meeting an aggressive schedule and bogging down in endless design iterations. Because of the author's experience overseeing dozens of failed and successful developments, he is able to present many real-life examples. Some of the key concepts covered are: Choosing the right architecture for the market - laboratory, military, or commercial, Hardware platforms - FPGAs, GPPs, specialized and hybrid devices, Standardization efforts to ensure interoperability and portability State-of-the-art components for radio frequency, mixed-signal, and baseband processing. The text requires only minimal knowledge of wireless communications; whenever possible, qualitative arguments are used instead of equations. An appendix provides a quick overview of wireless communications and introduces most of the concepts the readers will need to take advantage of the material. An essential introduction to SDR, this book is sure to be an invaluable addition to any technical bookshelf.

A Software-defined GPS and Galileo Receiver - 2006

Critical Information Infrastructures Security

- Dimitri Percia David 2022-01-01

This book constitutes the refereed proceedings of the 16th International Conference on Critical Information Infrastructures Security, CRITIS 2021, which took place in Lausanne, Switzerland,

during September 27-29, 2021. The 12 full papers included in this volume were carefully reviewed and selected from 42 submissions. They were organized in topical sections as follows: protection of cyber-physical systems and industrial control systems (ICS); C(I)IP organization, (strategic) management and legal aspects; human factor, security awareness and crisis management for C(I)IP and critical services; and future, TechWatch and forecast for C(I)IP and critical services.

Proceedings of the International Conference on Aerospace System Science and Engineering 2019 - Zhongliang Jing
2021-03-01

This book presents the proceedings of the International Conference on Aerospace System Science and Engineering (ICASSE 2019), held in Toronto, Canada, on July 30–August 1, 2019, and jointly organized by the University of Toronto Institute for Aerospace Studies (UTIAS) and the Shanghai Jiao Tong University School of Aeronautics and Astronautics. ICASSE 2019 provided a forum that brought together experts on aeronautics and astronautics to share new ideas and findings. These proceedings present high-quality contributions in the areas of aerospace system science and engineering, including topics such as trans-space vehicle system design and integration, air vehicle systems, space vehicle systems, near-space vehicle systems, aerospace robotics and unmanned systems, communication, navigation and surveillance, aerodynamics and aircraft design, dynamics and control, aerospace propulsion, avionics systems, optoelectronic systems, and air traffic management.

European GNSS (Galileo) Open Service - 2010

Algorithms for Global Positioning - Gilbert Strang
2012-05-10

The emergence of satellite technology has changed the lives of millions of people. In particular, GPS has brought an unprecedented level of accuracy to the field of geodesy. This text is a guide to the algorithms and mathematical principles that account for the success of GPS technology and replaces the authors' previous work, *Linear Algebra, Geodesy, and GPS* (1997). An initial discussion of the basic concepts,

characteristics and technical aspects of different satellite systems is followed by the necessary mathematical content which is presented in a detailed and self-contained fashion. At the heart of the matter are the positioning algorithms on which GPS technology relies, the discussion of which will affirm the mathematical contents of the previous chapters. Numerous ready-to-use MATLAB codes are included for the reader. This comprehensive guide will be invaluable for engineers and academic researchers who wish to master the theory and practical application of GPS technology.

Proceedings of the 2022 6th International Seminar on Education, Management and Social Sciences (ISEMSS 2022) - Ghaffar Ali 2022

This is an open access book. The aim of 2022 6th International Seminar on Education, Management and Social Sciences (ISEMSS 2022) is to bring together innovative academics and industrial experts in the field of Education, Management and Social Sciences to a common forum. The primary goal of the conference is to promote research and developmental activities in Education, Management and Social Sciences and another goal is to promote scientific information interchange between researchers, developers, students, and practitioners working all around the world. The conference will be held every year to make it an ideal platform for people to share views and experiences in Education, Management and Social Sciences and related areas.

Software Receiver Design - C. Richard Johnson, Jr 2011-08-18

Have you ever wanted to know how modern digital communications systems work? Find out with this step-by-step guide to building a complete digital radio that includes every element of a typical, real-world communication system. Chapter by chapter, you will create a MATLAB realization of the various pieces of the system, exploring the key ideas along the way, as well as analyzing and assessing the performance of each component. Then, in the final chapters, you will discover how all the parts fit together and interact as you build the complete receiver. In addition to coverage of crucial issues, such as timing, carrier recovery and equalization, the text contains over 400 practical exercises, providing invaluable

preparation for industry, where wireless communications and software radio are becoming increasingly important. A variety of extra resources are also provided online, including lecture slides and a solutions manual for instructors.

Position, Navigation, and Timing Technologies in the 21st Century - Y. Jade Morton 2021-01-13

Covers the latest developments in PNT technologies, including integrated satellite navigation, sensor systems, and civil applications. Featuring sixty-four chapters that are divided into six parts, this two-volume work provides comprehensive coverage of the state-of-the-art in satellite-based position, navigation, and timing (PNT) technologies and civilian applications. It also examines alternative navigation technologies based on other signals-of-opportunity and sensors and offers a comprehensive treatment on integrated PNT systems for consumer and commercial applications. Volume 1 of Position, Navigation, and Timing Technologies in the 21st Century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications contains three parts and focuses on the satellite navigation systems, technologies, and engineering and scientific applications. It starts with a historical perspective of GPS development and other related PNT development. Current global and regional navigation satellite systems (GNSS and RNSS), their inter-operability, signal quality monitoring, satellite orbit and time synchronization, and ground- and satellite-based augmentation systems are examined. Recent progresses in satellite navigation receiver technologies and challenges for operations in multipath-rich urban environment, in handling spoofing and interference, and in ensuring PNT integrity are addressed. A section on satellite navigation for engineering and scientific applications finishes off the volume. Volume 2 of Position, Navigation, and Timing Technologies in the 21st Century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications consists of three parts and addresses PNT using alternative signals and sensors and integrated PNT technologies for consumer and commercial applications. It looks at PNT using various radio signals-of-opportunity, atomic clock, optical, laser, magnetic field, celestial, MEMS and inertial sensors, as well as

the concept of navigation from Low-Earth Orbiting (LEO) satellites. GNSS-INS integration, neuroscience of navigation, and animal navigation are also covered. The volume finishes off with a collection of work on contemporary PNT applications such as survey and mobile mapping, precision agriculture, wearable systems, automated driving, train control, commercial unmanned aircraft systems, aviation, and navigation in the unique Arctic environment. In addition, this text: Serves as a complete reference and handbook for professionals and students interested in the broad range of PNT subjects. Includes chapters that focus on the latest developments in GNSS and other navigation sensors, techniques, and applications. Illustrates interconnecting relationships between various types of technologies in order to assure more protected, tough, and accurate PNT. Position, Navigation, and Timing Technologies in the 21st Century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications will appeal to all industry professionals, researchers, and academics involved with the science, engineering, and applications of position, navigation, and timing technologies.

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Satellite Communications and Navigation Systems - Enrico Re 2007-12-19

Satellite Communications and Navigation Systems publishes the proceedings of the 2006 Tyrrhenian International Workshop on Digital Communications. The book focuses on the integration of communication and navigation systems in satellites.

Digital Satellite Navigation and Geophysics

- Ivan G. Petrovski 2012-03-29

Bridge the gap between theoretical education and practical work experience with this hands-on guide to GNSS, which features:

- A clear, practical presentation of GNSS theory, with emphasis on GPS and GLONASS
- All the essential theory behind software receivers and signal simulators
- Key applications in navigation and geophysics, including INS aiding, scintillation monitoring, earthquake studies and more
- Physical explanations of various important phenomena, including the similarity of code delay and phase advance of GNSS signals, and negative cross-correlation between scintillation intensity and phase variations. Whether you are

a practising engineer, a researcher or a student, you will gain a wealth of insights from the authors' 25 years of experience. You can explore numerous practical examples and case studies and get hands-on user experience with a bundled real-time software receiver, signal simulator and a set of signal data, enabling you to create your own GNSS lab for research or study.

Intelligent Computing Methodologies - De-Shuang Huang 2016-07-11

This book - in conjunction with the double volume set LNCS 9771 and LNCS 9772 - constitutes the refereed proceedings of the 12th International Conference on Intelligent Computing, ICIC 2016, held in Lanzhou, China, in August 2016. The 221 full papers and 15 short papers of the three proceedings volumes were carefully reviewed and selected from 639 submissions. The papers are organized in topical sections such as signal processing and image processing; information security, knowledge discovery, and data mining; systems biology and intelligent computing in computational biology; intelligent computing in scheduling; information security; advances in swarm intelligence: algorithms and applications; machine learning and data analysis for medical and engineering applications; evolutionary computation and learning; independent component analysis; compressed sensing, sparse coding; social computing; neural networks; nature inspired computing and optimization; genetic algorithms; signal processing; pattern recognition; biometrics recognition; image processing; information security; virtual reality and human-computer interaction; healthcare informatics theory and methods; artificial bee colony algorithms; differential evolution; memetic algorithms; swarm intelligence and optimization; soft computing; protein structure and function prediction; advances in swarm intelligence: algorithms and applications; optimization, neural network, and signal processing; biomedical informatics and image processing; machine learning; knowledge discovery and natural language processing; nature inspired computing and optimization; intelligent control and automation; intelligent data analysis and prediction; computer vision; knowledge representation and expert system; bioinformatics.

EARTH OBSERVATION & NAVIGATION. LAW

AND TECHNOLOGY - Marlena Jankowska 2017-12-01

"Earth observation & navigation. Law and technology" jest publikacją wydaną przez Wydawnictwo Ius Publicum przy współpracy z Institute of Intellectual Property. Książka została wydana pod redakcją naukową dr Marleny Jankowskiej (Uniwersytet Śląski w Katowicach) oraz Profesora Mirosława Pawełczyka (Uniwersytet Śląski w Katowicach, Prezes Fundacji Ius Publicum), a także Profesora Sławomira Augustyn (Wojskowa Akademia Techniczna) i Doktora Marcina Kulawiaka (Politechnika Gdańska). Książka dotyczy tematyki obserwacji Ziemi i nawigacji. Zagadnienia te zostały omówione zarówno od strony technicznej, jaki i prawnej. Redaktorzy oraz autorzy książki wyszli z założenia, że dla zrozumienia tej problemami koniecznej jest zwrócenie naukowej uwagi na obie sfery obserwacji Ziemi i nawigacji.

GNSS Software Receivers - Kai Borre 2022-10-31

"This practical book is perfect for students and professionals interested in navigation. It shows how to build and operate multi-GNSS and multi-frequency receivers with state-of-the-art techniques using this up-to-date, complete and easy-to-follow text, including new signals (BOC) and supported by MATLAB© code and digital samples"--

Springer Handbook of Global Navigation Satellite Systems - Peter Teunissen 2017-06-16

This Handbook presents a complete and rigorous overview of the fundamentals, methods and applications of the multidisciplinary field of Global Navigation Satellite Systems (GNSS), providing an exhaustive, one-stop reference work and a state-of-the-art description of GNSS as a key technology for science and society at large. All global and regional satellite navigation systems, both those currently in operation and those under development (GPS, GLONASS, Galileo, BeiDou, QZSS, IRNSS/NAVIC, SBAS), are examined in detail. The functional principles of receivers and antennas, as well as the advanced algorithms and models for GNSS parameter estimation, are rigorously discussed. The book covers the broad and diverse range of land, marine, air and space applications, from everyday GNSS to high-precision scientific applications and provides detailed descriptions of

the most widely used GNSS format standards, covering receiver formats as well as IGS product and meta-data formats. The full coverage of the field of GNSS is presented in seven parts, from its fundamentals, through the treatment of global and regional navigation satellite systems, of receivers and antennas, and of algorithms and models, up to the broad and diverse range of applications in the areas of positioning and navigation, surveying, geodesy and geodynamics, and remote sensing and timing. Each chapter is written by international experts and amply illustrated with figures and photographs, making the book an invaluable resource for scientists, engineers, students and institutions alike.

A Software-Defined GPS and Galileo Receiver - Kai Borre 2008-11-01

This book explore the use of new technologies in the area of satellite navigation receivers. In order to construct a reconfigurable receiver with a wide range of applications, the authors discuss receiver architecture based on software-defined radio techniques. The presentation unfolds in a user-friendly style and goes from the basics to cutting-edge research. The book is aimed at applied mathematicians, electrical engineers, geodesists, and graduate students. It may be used as a textbook in various GPS technology and signal processing courses, or as a self-study reference for anyone working with satellite navigation receivers.

Global Navigation Satellite Systems - Shuanggen Jin 2012-02-03

Global Navigation Satellite System (GNSS) plays a key role in high precision navigation, positioning, timing, and scientific questions related to precise positioning. This is a highly precise, continuous, all-weather, and real-time technique. The book is devoted to presenting recent results and developments in GNSS theory, system, signal, receiver, method, and errors sources, such as multipath effects and atmospheric delays. Furthermore, varied GNSS

applications are demonstrated and evaluated in hybrid positioning, multi-sensor integration, height system, Network Real Time Kinematic (NRTK), wheeled robots, and status and engineering surveying. This book provides a good reference for GNSS designers, engineers, and scientists, as well as the user market.

China Satellite Navigation Conference (CSNC) 2020 Proceedings: Volume III - Jiadong Sun 2020-06-06

China Satellite Navigation Conference (CSNC 2020) Proceedings presents selected research papers from CSNC 2020 held during 22nd-25th November in Chengdu, China. These papers discuss the technologies and applications of the Global Navigation Satellite System (GNSS), and the latest progress made in the China BeiDou System (BDS) especially. They are divided into 13 topics to match the corresponding sessions in CSNC2020, which broadly covered key topics in GNSS. Readers can learn about the BDS and keep abreast of the latest advances in GNSS techniques and applications.

GPS versus Galileo: Balancing for Position in Space - Scott W. Beidleman 2012-08-12

This study investigates Europe's motives to develop the independent satellite navigation system known as Galileo despite the existence of America's successful global positioning system (GPS). The author contends that Europe's pursuit of Galileo is driven by a combination of reasons, including performance, independence, and economic incentive. With Galileo, Europe hopes to achieve political, security, and technological independence from the United States.

Additionally, Europe envisions overcoming the US monopoly on GNSS by seizing a sizable share of the expanding GNSS market and setting a new world standard for satellite navigation. Finally, the author explores Galileo's impact on the United States and reviews US policy towards Galileo. The study concludes with recommendations to strengthen the competitiveness of GPS. (Originally published by Air University Press)