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Acoustic Communication in Animals Insect Hearing and Acoustic Communication Animal Acoustic Communication Acoustic Communication in Insects and Anurans Acoustic Communication Coding Strategies in Vertebrate Acoustic Communication Vertebrate Sound Production and Acoustic Communication Signal and Acoustic Modeling for Speech and Communication Disorders Sustainability in the Maritime Domain Communications, Signal Processing, and Systems Acoustic Communication Analysis for Understanding Animal Behavior Flourishing electronic textiles towards pervasive, personalized and intelligent healthcare Proceedings of International Conference on Frontiers in Computing and Systems Underwater Acoustic Digital Signal Processing and Communication Systems Proceedings of Sixth International Congress on Information and Communication Technology Acoustic Communication in Birds Underwater Domain Awareness The Evolution of Emotional Communication A Time Domain Approach for Acoustic Analysis of Perforated Tube Silencers Analysis of Verbal and Nonverbal Communication and Enactment.The Processing Issues 6GN for Future Wireless Networks An Introduction to Sonar Systems Engineering Human Communication Technology Digital Underwater Acoustic Communications Digital TV and Wireless Multimedia Communication The Experience Science Musical Sense-Making Primate Hearing and Communication Convergence and Hybrid Information Technology Environmental Influences on Acoustic Communication in the Red-winged Blackbird Expression of emotion in music and vocal communication Passive Acoustic Monitoring of Cetaceans Acoustic Communication Asian and African Studies Spatial Modulation in the Underwater Acoustic Communication Channel 1972 Conference on Speech Communication and Processing, April 24-26, 1972 Acoustic and Vibrational Communication in Insects Digital, One Way, Acoustic Communication in the Ocean Acoustic Communication in Anurans An Automated Code Generator for Three-Dimensional Acoustic Wave Propagation with Geometrically Complex Solid Wall Boundaries

Acoustic Communication in Animals

2023-07-19

this book is the first volume of the bioacoustics series published by the society for bioacoustics this volume provides an overview of the advances and recent topics in acoustic communication in various animals most animals produce vibrations and sounds by moving their body parts including vocal organs these sounds can be research targets of bioacoustics studies how animals use these sounds especially in inter individual relationships is the focus of this volume acoustic communication in animals the authors expertise varies from molecular biology neurobiology to psychology and human brain imaging their research subjects range from invertebrates to humans despite the variety of topics chapters are developed under the consideration of ethology and evolution readers will recognize the profundity of the topics in each chapter in addition the view and understanding of natural sound sequences produced by animals can vary among different cultures research from japan and regions that have been underrepresented in previous literature can offer new ideas and unique perspectives in the study of bioacoustics readers can grasp the progress of this research field in a broad range of species in one book the book presents multi and interdisciplinary topics and appeals to researchers and students in fields including psychology physiology zoology ethology and neurosciences

Insect Hearing and Acoustic Communication

2013-11-08

this volume provides a comprehensive selection of recent studies addressing insect hearing and acoustic communication the variety of signalling behaviours and hearing organs makes insects highly suitable animals for exploring and analysing signal generation and hearing in the context of neural processing ecology evolution and genetics across a variety of hearing species like moths crickets bush crickets grasshoppers cicadas and flies the leading researchers in the field cover recent scientific progress and address key points in current research such as how can we approach the evolution of hearing in insects and what is the developmental and neural origin of the auditory organs how are hearing and sound production embedded in the natural lifestyle of the animals allowing intraspecific communication but also predator avoidance and even predation what are the functional properties of hearing organs and how are they achieved at the molecular biophysical and neural levels what are the neural mechanisms of central auditory processing and signal generation the book is intended for students and researchers both inside and outside of the fascinating field of bioacoustics and aims to foster understanding of hearing and acoustic communication in insects

Animal Acoustic Communication

2012-12-06

the last decades have brought a significant increase in research on acoustic communication in animals publication of scientific papers on both empirical and theoretical aspects of this topic has greatly increased and a new journal bioacoustics is entirely devoted to such articles coupled with this proliferation of work is a recognition that many of the current issues are best approached with an interdisciplinary perspective requiring technical and theoretical contributions from a number of areas of inquiry that have traditionally been separated with the notable exception of a collection edited by lewis 1983 there have been few volumes predominately focused on technical issues in comparative bioacoustics to follow up the early works edited by lanyon and tavolga 1960 and busnel 1963 it was the tremendous

growth of expertise concerning this topic in particular that provided the initial impetus to organize this volume which attempts to present fundamental information from both theoretical and applied aspects of current bioacoustics research while a completely comprehensive review would be impractical this volume offers a basic treatment of a wide variety of topics aimed at providing a conceptual framework within which researchers can address their own questions each presentation is designed to be useful to the broadest possible spectrum of researchers including both those currently working in any of the many and diverse disciplines of bioacoustics and others that may be new to such studies

Acoustic Communication in Insects and Anurans

2002-07-15

walk near woods or water on any spring or summer night and you will hear a bewildering and sometimes deafening chorus of frog toad and insect calls how are these calls produced what messages are encoded within the sounds and how do their intended recipients receive and decode these signals how does acoustic communication affect and reflect behavioral and evolutionary factors such as sexual selection and predator avoidance h carl gerhardt and franz huber address these questions among many others drawing on research from bioacoustics behavior neurobiology and evolutionary biology to present the first integrated approach to the study of acoustic communication in insects and anurans they highlight both the common solutions that these very different groups have evolved to shared challenges such as small size ectothermy cold bloodedness and noisy environments as well as the divergences that reflect the many differences in evolutionary history between the groups throughout the book gerhardt and huber also provide helpful suggestions for future research

Acoustic Communication

2006-04-18

in order to communicate animals send and receive signals that are subject to their particular anatomical psychological and environmental constraints this shar volume discusses both the production and perception of acoustic signals chapters address the information that animals communicate how the communication is developed and learned and how communication systems have adapted and evolved within species the book will give examples from a variety of species

Coding Strategies in Vertebrate Acoustic Communication

2020-03-28

information is a core concept in animal communication individuals routinely produce acquire process and store information which provides the basis for their social life this book focuses on how animal acoustic signals code information and how this coding can be shaped by various environmental and social constraints taking birds and mammals including humans as models the authors explore such topics as communication strategies for public and private signaling static and dynamic signaling the diversity of coded information and the way information is decoded by the receiver the book appeals to a wide audience ranging from bioacousticians ethologists and ecologists to evolutionary biologists intended for students and researchers alike it promotes the idea that shannon and weaver s mathematical theory of communication still represents a strong framework for understanding all aspects of the communication process including its dynamic dimensions

Vertebrate Sound Production and Acoustic Communication

2016-04-27

although the fundamental principles of vocal production are well understood and are being increasingly applied by specialists to specific animal taxa they stem originally from engineering research on the human voice these origins create a double barrier to entry for biologists interested in understanding acoustic communication in their study species the proposed volume aims to fill this gap providing easy to understand overviews of the various relevant theories and techniques and showing how these principles can be implemented in the study of all main vertebrate groups the volume will have eleven chapters assembled from the world s leading researchers at a level intelligible to a wide audience of biologists with no background in engineering or human voice science some will cover sound production in a particular vertebrate group others will address a particular issue such as vocal learning across vertebrate taxa the book will highlight what is known and how to implement useful techniques and methodologies but will also summarize current gaps in the knowledge it will serve both as a tutorial introduction for newcomers and a springboard for further research for all scientists interested in understanding animal acoustic signals

Signal and Acoustic Modeling for Speech and Communication Disorders

2018-12-17

signal and acoustic modeling for speech and communication disorders demonstrates how speech signal processing and acoustic modeling can be instrumental in early detection and successful intervention with speech deficits resulting from parkinson s disease autism spectrum disorder cleft palate intellectual disabilities and neuro motor impairments utilizing some of the most advanced methods in signal and acoustic modeling this eminent group of contributors show how such technologies can inure to the benefit of healthcare and to society writ large paradoxically what most of us take for granted still remains a sisyphian battle for those with speech and language disorders who struggle every day to make themselves heard and understood the purpose of this book is to stimulate a vibrant discussion among speech scientists system designers and practitioners on how to best marshal the latest advances in signal and acoustic modeling to address some of the most challenging speech and communication disorders affecting a wide variety of patient populations across the world

Sustainability in the Maritime Domain

2021-05-29

this volume explores options for a sustainable maritime domain including maritime transportation such as maritime spatial planning msp maritime education and training maritime traffic and advisory systems maritime security other activities in the maritime domain covered in the book include small scale fisheries and sustainable fisheries and greening the blue economy the book aims to provide the building blocks needed for a framework for good ocean governance a framework that will serve through the next decade and and hopefully well beyond the 2030 milestone of the un agenda for sustainable development in short this book brings together the problems of the current world and sustainable solutions that are in the development process and will eventually materialize in the not so distant future additionally the book presents a trans disciplinary analysis of integral sustainable maritime transportation solutions and crucial issues relevant to good ocean governance that have recently been discussed at different national regional and international fora highlighting ongoing work to develop and support governance systems that facilitate industry requirements and meet the needs of coastal states and indigenous peoples of researchers of

spatial planners and of other sectors dependent on the oceans the book will be of interest to researchers across many disciplines especially those that are engaged in cross sectoral research and developments in the maritime transport sector and across the wider maritime domain to this end the book covers areas including natural and social sciences geographical studies spatial planning maritime security and gender studies as they relate to transport and the wider maritime sector in addition the book explores frameworks for sustainable ocean governance being developed under the un s agenda for sustainable development to 2030 it will also look beyond the 2030 milepost under that agenda and will be of use to national and international policymakers and practitioners government actors at the eu and other regional and national levels and to researchers of ocean governance sustainability and management and maritime transport

Communications, Signal Processing, and Systems

2019-08-14

this book brings together papers from the 2018 international conference on communications signal processing and systems which was held in dalian china on july 14 16 2018 presenting the latest developments and discussing the interactions and links between these multidisciplinary fields the book spans topics ranging from communications signal processing and systems it is aimed at undergraduate and graduate electrical engineering computer science and mathematics students researchers and engineers from academia and industry as well as government employees

Acoustic Communication Analysis for Understanding Animal Behavior

2022-09-13

in the face of pandemic infectious diseases and increasing aging trends traditional public health systems lack the capacity for real time monitoring immediate clinical detection continuous vital sign monitoring and the implementation of long cycle treatment protocols among other deficiencies on the basis of the rapid development of wearable electronic devices the internet of things and artificial intelligence the future healthcare model will transform from a therapeutic centralized passive and even one size fits all treatment to a new paradigm of proactive preventive personalized customized and intelligent way the development of wearable electronics has facilitated the evolution of healthcare from healthcare to biological monitoring enabling continuous monitoring of critical biomarkers for diagnostic treatment physiological health monitoring and assessment electronic textiles e textiles are among the rapidly developing wearable electronics in recent years they have revolutionized the functionality of traditional textiles by incorporating smart attributes enabling unique and multifunctional applications significantly e textiles have made notable advancements in the field of personalized healthcare the article introduces several common e textiles and their applications in personalized medicines which also gives a forward looking outlook on their future growth in infectious diseases real time health preventive monitoring auxiliary therapy and rehabilitation training

Flourishing electronic textiles towards pervasive, personalized and intelligent healthcare

2024-01-04

this book gathers outstanding research papers presented at the international conference on frontiers in computing and systems comsys 2020 held on january 13 15 2019 at jalpaiguri government engineering college west bengal india and jointly organized by the department of computer science engineering and department of electronics communication engineering the book presents the latest research and results in various fields of machine learning computational intelligence vlsi networks and systems computational biology and security making it a rich

source of reference material for academia and industry alike

Proceedings of International Conference on Frontiers in Computing and Systems

2020-11-23

underwater acoustic digital signal processing and communications is an area of applied research that has witnessed major advances over the past decade rapid developments in this area were made possible by the use of powerful digital signal processors dsps whose speed computational power and portability allowed efficient implementation of complex signal processing algorithms and experimental demonstration of their performance in a variety of underwater environments the early results served as a motivation for the development of new and improved signal processing methods for underwater applications which today range from classical of autonomous underwater vehicles and sonar signal processing to remote control underwater wireless communications this book presents the diverse areas of underwater acoustic signal processing and communication systems through a collection of contributions from prominent researchers in these areas their results both new and those published over the past few years have been assembled to provide what we hope is a comprehensive overview of the recent developments in the field the book is intended for a general audience of researchers engineers and students working in the areas of underwater acoustic signal processing it requires the reader to have a basic understanding of the digital signal processing concepts each topic is treated from a theoretical perspective followed by practical implementation details we hope that the book can serve both as a study text and an academic reference

Underwater Acoustic Digital Signal Processing and Communication Systems

2013-03-09

this book gathers selected high quality research papers presented at the sixth international congress on information and communication technology held at brunel university london on february 25 26 2021 it discusses emerging topics pertaining to information and communication technology ict for managerial applications e governance e agriculture e education and computing technologies the internet of things iot and e mining written by respected experts and researchers working on ict the book offers a valuable asset for young researchers involved in advanced studies the book is presented in four volumes

Proceedings of Sixth International Congress on Information and Communication Technology

2021-09-16

acoustic communication in birds volume 1 production perception and design features of sounds presents the scientific study of bird vocalizations this book discusses the relations between the physical structure of bird vocalization and their quality as perceived by the recipient organized into nine chapters this volume begins with an overview of the first sound recording of bird sound this text then outlines some of the complex processes and events between sound production and behavior response to sound other chapters consider the study of neural control of vocalizations in birds this book discusses as well the acoustic information transmitted through the wide range of habitats plays a crucial role in different avian behaviors including individual and species recognition territorial defense mate selection and song learning the final chapter deals with a more detailed functional interpretation of a particular sound this book is a valuable resource for ornithologists ethologists and research workers

Acoustic Communication in Birds

2012-12-02

this book presents a comprehensive analysis of the emerging underwater challenges facing india in the indian ocean region with major economic powers like china the united states and russia modernising their submarine fleets and building advanced unmanned underwater vessels to enhance surveillance capabilities the competition in the indo pacific underwater domain has intensified the book focuses on the issues of detecting tracking and classifying submarines underwater drones in the indian ocean examines the indian navy s present anti submarine warfare asw capabilities in combating underwater threats and discusses the scope for inter agency inter departmental cooperation framework to monitor the undersea activity in the region studies the naval composition and strengths of india and other countries in the neighbourhood and reviews maritime domain awareness practices employed by leading navies including nato for submarine detection assesses the technology development efforts to deal with these challenges and brings out recommendations an expert study of undersea surveillance this book will be indispensable to students and researchers of military and strategic studies defence studies critical security conflict resolution intelligence studies and security studies it will also be of interest to governments naval establishments think tanks and public policy institutes

Underwater Domain Awareness

2022-05-09

why do we think that we can understand animal voices such as the aggressive barking of a pet dog and the longing meows of the family cat why do we think of deep voices as dominant and high voices as submissive are there universal principles governing our own communication system can we even see how close animals are related to us by constructing an evolutionary tree based on similarities and dissimilarities in acoustic signaling research on the role of emotions in acoustic communication and its evolution has often been neglected despite its obvious role in our daily life when we infect others with our laugh soothe a crying baby with a lullaby or get goose bumps listening to classical music we are barely aware of the complex processes upon which this behavior is based it is not facial expressions or body language that are affecting us but sound they are present in music and speech as emotional prosody and allow us to communicate not only verbally but also emotionally this groundbreaking book presents a thorough exploration into how acoustically conveyed emotions are generated and processed in both animals and man it is the first volume to bridge the gap between research in the acoustic communication of emotions in humans with those in animals using a comparative approach with the communication of emotions being an important research topic for a range of scientific fields this book is valuable for those in the fields of animal behaviour anthropology evolutionary biology human psychology linguistics musicology and neurology

The Evolution of Emotional Communication

2013-01-24

this volume brings together the advanced research results obtained by the european cost action 2102 cross modal analysis of verbal and nonverbal communication primarily discussed at the pink sspnet cost2102 international conference on analysis of verbal and nonverbal communication and enactment the processing issues held in budapest hungary in september 2010 the 40 papers presented were carefully reviewed and selected for inclusion in the book the volume is arranged into two scientific sections the first section multimodal signals

analysis processing and computational issues deals with conjectural and processing issues of defining models algorithms and heuristic strategies for data analysis coordination of the data flow and optimal encoding of multi channel verbal and nonverbal features the second section verbal and nonverbal social signals presents original studies that provide theoretical and practical solutions to the modelling of timing synchronization between linguistic and paralinguistic expressions actions body movements activities in human interaction and on their assistance for an effective human machine interactions

A Time Domain Approach for Acoustic Analysis of Perforated Tube Silencers

1999

this 2 volume set constitutes the proceedings of the 5th international conference on 6g for future wireless networks 6gn 2022 held in harbin china in december 2022 the 60 full papers were selected from 194 submissions and present the state of the art and practical applications of 6g technologies the papers are arranged thematically in tracks as follows resource allocation for 6g networks security and privacy for 6g networks big data mining and pattern analysis techniques for 6g networks artificial intelligent techniques for 6g networks mobile edge computing for 6g networks unmanned aerial vehicle communication for 6g networks

Analysis of Verbal and Nonverbal Communication and Enactment. The Processing Issues

2011-11-25

written in tutorial style this textbook discusses the fundamental topics of modern day sonar systems engineering for the analysis and design of both active and passive sonar systems included are basic signal design for active sonar systems and understanding underwater acoustic communication signals mathematical theory is provided plus practical design and analysis equations for both passive and active sonar systems practical homework problems are included at the end of each chapter and a solutions manual and lecture slides for each chapter are available for adopting professors

6GN for Future Wireless Networks

2023-07-07

human communication technology a unique book explaining how perception location communication cognition computation networking propulsion integration of federated internet of robotic things iort and digital platforms are important components of new generation iort applications through continuous real time interaction with the world the 16 chapters in this book discuss new architectures networking paradigms trustworthy structures and platforms for the integration of applications across various business and industrial domains that are needed for the emergence of intelligent things static or mobile in collaborative autonomous fleets these new apps speed up the progress of paradigms of autonomous system design and the proliferation of the internet of robotic things iort collaborative robotic things can communicate with other things in the iort learn independently interact securely with the world people and other things and acquire characteristics that make them self maintaining self aware self healing and fail safe operational due to the ubiquitous nature of collaborative robotic things the iort which binds together the sensors and the objects of robotic things is gaining popularity therefore the information contained in this book will provide readers with a better understanding of this interdisciplinary field audience researchers in various fields including computer science iot artificial intelligence machine learning and big data analytics

An Introduction to Sonar Systems Engineering

2017-02-24

digital underwater acoustic communications focuses on describing the differences between underwater acoustic communication channels and radio channels discusses loss of transmitted sound in underwater acoustic channels describes digital underwater acoustic communication signal processing and provides a comprehensive reference to digital underwater acoustic communication equipment this book is designed to serve as a reference for postgraduate students and practicing engineers involved in the design and analysis of underwater acoustic communications systems as well as for engineers involved in underwater acoustic engineering introduces the basics of underwater acoustics along with the advanced functionalities needed to achieve reliable communications in underwater environment identifies challenges in underwater acoustic channels relative to radio channels underwater acoustic propagation and solutions shows how multi path structures can be thought of as time diversity signals presents a new robust signal processing system and an advanced fh ss system for multimedia underwater acoustic communications with moderate communication ranges above 20km and rates above 600bps describes the apnfm system for underwater acoustic communication equipment including both civil and military applications to be employed in active sonar to improve its performance

Human Communication Technology

2021-11-16

this book constitutes the refereed proceedings of the 13th international forum of digital tv and wireless multimedia communication iftc 2016 held in shanghai china in november 2016 the 38 revised full papers presented were carefully reviewed and selected from 102 submissions the papers are organized in topical sections on image processing audio processing image and video compression telecommunications

Digital Underwater Acoustic Communications

2016-09-16

philosopher natural scientist and dramaturge to theme parks museums zoos and other types of venues frank has been in the global attraction business for 25 years he draws on that background and on his education in zoology and human biology u of vienna to study human experience with the same scientific vigor that human cognition has been studied for three decades he discusses what human experience consists of the making of reality how to design attractions and experiences a system related classification a process related classification and on the verge of a new attraction era distributed in the us by isbs annotation 2012 book news inc portland or booknews com

Digital TV and Wireless Multimedia Communication

2017-03-11

musical sense making enaction experience and computation broadens the scope of musical sense making from a disembodied cognitivist approach to an experiential approach revolving around the definition of music as a temporal and sounding art it argues for an interactional and experiential approach that brings together the richness of sensory experience and principles of cognitive economy starting from the major

distinction between in time and outside of time processing of the sounds this volume provides a conceptual and operational framework for dealing with sounds in a real time listening situation relying heavily on the theoretical groundings of ecology cybernetics and systems theory and stressing the role of epistemic interactions with the sounds these interactions are considered from different perspectives bringing together insights from previous theoretical groundings and more recent empirical research the author s findings are framed within the context of the broader field of enactive and embodied cognition recent action and perception studies and the emerging field of neurophenomenology and dynamical systems theory this volume will particularly appeal to scholars and researchers interested in the intersection between music philosophy and or psychology

The Experience Science

2012

presents a comprehensive review of nonhuman primate audition and vocal communication these are obviously intimately related topics but are often addressed separately the hearing abilities of primates have been tested experimentally in a large number of species across the primate order and these studies have revealed both consistent patterns as well as interesting variation within and between taxonomic groups recent studies have shed light on how variation in anatomical structures along the auditory pathway relates to variation in auditory sensitivity at the same time ongoing studies of vocal communication in wild primate populations continue to reveal new insights into the social and environmental contexts of many primate calls and the range of known primate vocalizations has increased dramatically with the development of more sophisticated and accessible auditory equipment and software that enables the recording and analysis of higher fidelity and broader band recordings including documenting very high frequency i e ultrasound vocalizations historically the relative importance of primate calls has been evaluated qualitatively by the perception of the researcher but new methods and approaches now enable a greater appreciation for how signals are used and perceived by the primates in question the integration of anatomical and behavioral data on acoustic communication and the environmental correlates thereof has significant potential for reconstructing behavior in the fossil record this confluence of factors and accumulating evidence for the sophistication and complexity in both the signal and its interpretation indicate that a book synthesizing this information across primates is warranted and represents an important contribution to the literature

Musical Sense-Making

2020-11-29

this book constitutes the refereed proceedings of the 5th international conference on convergence and hybrid information technology icht 2011 held in daejeon korea in september 2011 the 94 revised full papers were carefully selected from 323 initial submissions the papers are organized in topical sections on communications and networking intelligent systems and applications sensor network and cloud systems information retrieval and scheduling hardware and software engineering security systems robotics and rfid systems pattern recognition image processing and clustering data mining as well as human computer interaction

Primate Hearing and Communication

2017-09-04

two of the most important social skills in humans are the ability to determine the moods of those around us and to use this to guide our behavior to accomplish this we make use of numerous cues among the most important are vocal cues from both speech and non speech sounds

2023-09-08

10/14

2014 2015 fafsa paper application

music is also a reliable method for communicating emotion it is often present in social situations and can serve to unify a group's mood for ceremonial purposes funerals weddings or general social interactions scientists and philosophers have speculated on the origins of music and language and the possible common bases of emotional expression through music speech and other vocalizations they have found increasing evidence of commonalities among them however the domains in which researchers investigate these topics do not always overlap or share a common language so communication between disciplines has been limited the aim of this research topic is to bring together research across multiple disciplines related to the production and perception of emotional cues in music speech and non verbal vocalizations this includes natural sounds produced by human and non human primates as well as synthesized sounds research methodology includes survey behavioral and neuroimaging techniques investigating adults as well as developmental populations including those with atypical development studies using laboratory tasks as well as studies in more naturalistic settings are included

Convergence and Hybrid Information Technology

2011-09-13

passive acoustic monitoring is increasingly used by the scientific community to study survey and census marine mammals especially cetaceans many of which are easier to hear than to see pam is also used to support efforts to mitigate potential negative effects of human activities such as ship traffic military and civilian sonar and offshore exploration walter zimmer provides an integrated approach to pam combining physical principles discussion of technical tools and application oriented concepts of operations additionally relevant information and tools necessary to assess existing and future pam systems are presented with matlab code used to generate figures and results so readers can reproduce data and modify code to analyse the impact of changes this allows the principles to be studied whilst discovering potential difficulties and side effects aimed at graduate students and researchers the book provides all information and tools necessary to gain a comprehensive understanding of this interdisciplinary subject

Environmental Influences on Acoustic Communication in the Red-winged Blackbird

1982

since the first edition was published seventeen years ago social and technical changes have altered the world of acoustic communication this book draws upon many traditional disciplines that deal with specific aspects of sound and presents material within an interdisciplinary framework it establishes a model for understanding all acoustic and aural experiences both in their traditional forms and as they have been radically altered in the 20th century digital technology has completely redefined the listening and consumption patterns of sound we are now able to benefit from the march of technology via a companion cd rom which accompanies this volume for the first time

Expression of emotion in music and vocal communication

2014-08-18

a modulation technique for increasing the reliable data rate achievable by an underwater acoustic communication system is presented and demonstrated the technique termed spatial modulation seeks to control the spatial distribution of signal energy such that multiple parallel communication channels are supported by the single physical ocean channel results from several experiments successfully demonstrate higher obtainable data rates and power throughput given a signal energy constraint a communication architecture with access to parallel channels will have increased capacity and reliability as compared to one with access to a single channel assuming the use of multiple element

spatial arrays at both the transmitter and receiver an analytic framework is developed that allows a multiple input multiple output physical channel to be transformed into a set of virtual parallel channels the continuous time vector singular value decomposition is the primary vehicle for this transformation given knowledge of the channel impulse responses and assuming additive white gaussian noise as the only interference the advantages of using spatial modulation over a deterministic channel may be exactly computed improving performance over an ensemble of channels using spatial modulation is approached by defining and then optimizing various average performance metrics including average signal to noise ratio average signal to noise plus interference ratio and minimum square error several field experiments were conducted detailed channel impulse response measurements were made enabling application of the decomposition methodology the number strength and stability of the available parallel channels were analyzed the parallel channels were readily interpreted in terms of the underlying sound propagation field acoustic communication tests were conducted comparing conventional coherent modulation to spatial modulation in one case a reliable data rate of 24000 bits per second with a 4 khz bandwidth signal was achieved with spatial modulation when conventional signaling could not achieve that rate in another test the benefits of spatial modulation for a horizontally distributed communication system such as an underwater network with autonomous underwater vehicles were validated

Passive Acoustic Monitoring of Cetaceans

2011-04-21

Acoustic Communication

2001

Asian and African Studies

1992

Spatial Modulation in the Underwater Acoustic Communication Channel

2000

1972 Conference on Speech Communication and Processing, April 24-26, 1972

1972

Acoustic and Vibrational Communication in Insects

1985

Digital, One Way, Acoustic Communication in the Ocean

1990

Acoustic Communication in Anurans

1984

An Automated Code Generator for Three-Dimensional Acoustic Wave Propagation with Geometrically Complex Solid Wall Boundaries

1999

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