
Acoustic MIMO Signal Processing

identification of acoustic mimo systems: challenges and ... - signal processing 86 (2006) 1278-1295
identification of acoustic mimo systems: challenges and opportunities yiteng huanga,, jacob benestyb,
jingdong chena **acoustic mimo signal processing - gbv** - contents 1 introduction 1 1.1 acoustic mimo signal
processing 1 1.2 organization of the book 4 part i theory 2 acoustic mimo systems 9 2.1 signal models 9 **ieee**
transactions on audio, speech, and language ... - benesty et al.: on microphone-array beamforming from
a mimo acoustic signal processing perspective 1055 fig. 4. illustration of a microphone array system. **sigpp**
gnal processing for underwater acoustic mimo ofdm - sigpp gnal processing for underwater acoustic
mimo ofdm milica stojanovic northeastern university millitsa@eceu onr (n00014-07-1-0202 muri n000140202,
muri n00014-07-1-0738) **acoustic mimo signal processing pdf** - save this pdf ebook to read acoustic mimo
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online collection **filter design for mimo sampling and reconstruction ...** - tiple source separation, multiple-
input multiple-output (mimo) channel, multirate signal processing, semi-infinite optimization, signal
reconstruction. i. introduction multiple-input multiple-output (mimo) deconvo-lution or channel equalization
involves the recovery of the inputs to a mimo channel whose outputs can be observed and whose
characteristics may either be known or unknown. the ... **dsp implementation of siso and mimo ofdm**
acoustic modems - 1 dsp implementation of siso and mimo ofdm acoustic modems hai yan, shengli zhou,
zhijie shi, jun-hong cui, lei wan, jie huang, and hao zhou the underwater sensor network lab, university of
connecticut, storrs, ct 06269, usa **adaptive channel estimation for underwater acoustic mimo ...** -
adaptive channel estimation for underwater acoustic mimo ofdm systems milica stojanovic northeastern
university departmentof electrical and computer engineering, 409 da boston, ma 02115 millitsa@eceu abstract
long acoustic multipath limits the applicability of mimo ofdm channel estimation methods that require matrix
in-version of size mtl , where mt is the number of transmit elements and ... **mimo ofdm over underwater**
acoustic channels - mit - acoustic multipath, however, limits the applicability of mimo channel estimation
methods that require inversion of a matrix whose size is proportional to both the number of transmit
underwater acoustic mimo ofdm: an experimental analysis - mimo (multiple-input multiple-output)
formen l'avantguarda de la nova generaci o de m odems subaqu atics. nom es recentment s'ha comen cat a
experimentar en entorns reals. **capacity analysis of underwater acoustic mimo ... - ethesis** - the
attenuation mechanisms that impacts underwater acoustic signal can be viewed principally as the sum of
these three terms : the spreading loss, absorption loss and reflection loss. **acoustic mimo communications**
in a very shallow ... - springer - however, most investigations on mimo acoustic communication are carried
out in underwater acoustic channels with a large depth (>100 m) (song et al ., 2006), **a framework for**
multiple object tracking in underwater ... - objects through acoustic wavefront signal analysis techniques
associated with real-time electronic surveillance and acoustic monitoring (esam) operations. particular
importance is given in this work to the estimation of the range and speed of deep underwater moving objects
modeled as point targets. the work demonstrates how to use kronecker products signal algebra (ksa), a branch
of finite ... **mimo underwater acoustic communications in ports and ...** - signal (a pseudo-noise
sequence) and the corresponding received mimo signal at various stages of the deconvolution process; prior to
any interference removal, at the output of the linear equalization (le) process and at the output of an
interference cancellation process **ebook : acoustic mimo signal processing huang yiteng ...** - acoustic
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acoustic mimo signal processing huang yiteng benesty jacob chen jingdong : - **exploiting joint sparsity for**
underwater acoustic mimo ... - system model of mimo acoustic communication the receiving signal of a
mimo acoustic communication system with n transmitters and m receivers can be written as [5]: **2009**
underwater acoustic signal processing workshop - c-1 signal processing for underwater acoustic mimo
ofdm, milica stojanovic, northeastern university c-2 results of ofdm transmissions in the kauai acomms muri
2008 experiment, **enabling underwater acoustic cooperative mimo systems by ...** - enabling
underwater acoustic cooperative mimo systems by metamaterial-enhanced magnetic induction soham desai 1,
vaishnendr d sudev , xin tan1, pu wang2, and zhi sun **doppler compensated front end receiver design for**
... - underwater acoustic channels using mimo-ofdm j ... multiple-input multiple-output (mimo) techniques
have been actively pursued in uwa communications recently to increase the system performance over the
bandwidth-limited channels. however, uwa channels are far more challenging than their radio counterparts.
due to their limited bandwidth, even though uwa channels are wideband in nature due to ... **spatially**
correlated underwater acoustic multiple-input ... - in this paper, we present a multiple-input and multiple-
output (mimo) channel signal model for underwater acoustic communication systems. this this model uses the
ray-tracing method to obtain the deterministic part of a channel signal, whereas the fluctuating part is
obtained on the basis of the **adaptive algorithms for mimo acoustic echo cancellation** - adaptive
algorithms for mimo acoustic echo cancellation 3 that the only solution to the nonuniqueness problem is to
reduce the coherence between the different loudspeaker signals, and an efficient low **to chemical and life**
sciences, acoustic mimo signal ... - p to chemical and life sciences, acoustic mimo signal processing, the

diagnosis of lymphoproliferative diseases, second edition, neutrinos and beyond: new windows on nature, interdisciplinary concepts in cardiovascular health: volume ii: **ieee transactions on audio, speech, and language ...** - ieee transactions on audio, speech, and language processing, vol. 20, no. 6, august 2012 1829

combined acoustic mimo channel crosstalk cancellation and room impulse response reshaping **a simple and effective noise whitening method for ...** - a simple and effective noise whitening method for underwater acoustic ofdm christian r. berger, shengli zhou, weian chen, and jie huang department of electrical and computer engineering, university of connecticut, storrs, connecticut 06269, usa **medium access control for underwater acoustic sensor ...** - medium access control for underwater acoustic sensor networks with mimo links li-chung kuo wireless networks and embedded systems laboratory department of electrical engineering state university of new york at buffalo buffalo, new york 14260 lkuo2@eng.buffalo tommaso melodia wireless networks and embedded systems laboratory department of electrical engineering state university of new york ... **capacity of mimo systems in shallow water acoustic channels** - capacity of mimo systems in shallow water acoustic channels andreja radosevic y, dario fertonani yy, tolga m. duman , john g. proakis , and milica stojanovicz **multi-channel combining and equalization for underwater ...** - multichannel combining and equalization for underwater acoustic mimo channels aijun song and mohsen badiy college of marine and earth studies university of delaware **improving the quality of underwater acoustic channel via ...** - the aim is to select the receive signal directions that provide high energy, smaller time variation, and can potentially shorten the channel's power-delay profile. a model of the underwater acoustic multiple-input multiple-output channel is presented. the beamforming algorithm is tested on the modeled channel matched to experimentally obtained sea-trial power-delay profile. it is ... **mimo-ofdm over an underwater acoustic channel** - mimo-ofdmover an underwater acoustic channel baosheng li', shengli zhou, milica stojanovic2, lee freitag3, jie huang', peter willett' 'dept. ofelec. and computer engr ... **eigenspace adaptive filtering for efficient pre ...** - eigenspace adaptive filtering for efficient pre-equalization of acoustic mimo systems s. spors 1, h. buchner 2 and r. rabenstein 2 1 deutsche telekom laboratories **underwater acoustic multimedia communication based on mimo ...** - yp,m,k,z the received signal of the k-th subcarrier of the m-th ofdm symbol by using z-th received antenna for p -th user h p,m,k,l,z the impulse response of the underwater channel of the k -th subcarrier of the m -th **automated vehicle detection and classification using ...** - automated vehicle detection and classification using acoustic and seismic signals naoko evans department of electronics, university of york, submitted for the degree of doctor of philosophy **mimo fundamentals and signal processing course** - linkoping university, isy, communication systems, e. g. larsson mimo fundamentals and signal processing objectives and intended audience this short course will give an introduction to the basic principles and **1: audio and acoustic signal processing** - 9.3.5*: tensor-based signal processing for multi-sensor systems 9.4: multi-antenna and multi-channel signal processing for communications 9.4.1*: mimo systems and algorithms **springer series on signals and communication technology** - acoustic mimo signal processing y. huang, j. benesty, j. chen isbn 978-3-540-37630-9 algorithmic information theory mathematics of digital information processing p. seibt isbn 978-3-540-33218-3 continuous-time signals y.s. shmaliy isbn 978-1-4020-4817-3 interactive video algorithms and technologies r.i. hammoud (ed.) isbn 978-3-540-33214-5 handover in dvb-h investigation and analysis x. yang ... **on microphone- on microphone ---array beamforming array ...** - on microphone-on microphone ---array beamforming array beamforming from a mimo acoustic signal processing perspective jacob benesty, jingdongchen, yiteng(arden) haungand jacekdmochowski **the tricon framework for adaptive mimo signal processing** - the tricon framework for adaptive mimo signal processing with focus on the generic sylvester constraint herbert buchner 1 , robert aichner 2 , walter kellermann 3 **mimo systems using ofdm in underwater communications** - mimo systems using ofdm in underwater communications adriana f. de a. oliveira 1 , eduardo r. vale 2 , julio c. dal bello 3 1, 2, 3 (telecommunications department, school of engineering / federal fluminense university, brazil) **adaptive mimo detection of ofdm signals in an underwater ...** - the received signal, and initial resampling is performed over several blocks using an estimate a_{00} , then the residual doppler factor is $a_t(n) = (a_{0t}(n) a_{00}) = (1 + a_{0t}(n))$ [9]. **on the region of feasibility of interference alignment in ...** - index terms—underwater acoustic networks, mimo technology, interference alignment, channel estimation. i. introduction underwater acoustic sensor networks (uw-asns) [1] consist of static and mobile sensors deployed to perform collaborative monitoring tasks over a body of water. these networks enable oceanographic applications such as environmental monitoring, offshore exploration, and ... **efficient jamming strategies on a mimo gaussian channel ...** - efficient jamming strategies on a mimo gaussian channel with known target signal covariance jie gao1, sergiy a. vorobyov1,2, and hai jiang1 1 dept. electrical & computer engineering, universityof alberta, edmonton, canada **ofdm system for underwater acoustic communications** - develop and assess the baseline signal processing blocks for a point-to-point ofdm link, which would lie at the core of any feedback scheme (beyond the scope of this work) to compute quality metrics and accordingly set the modulation parameters (bandwidth, number of carriers, constellation size, coding rate, etc.) for optimal modem performance. the thesis discusses algorithms for packet ... **high data rate acoustic massive mimo for underwater ...** - high data rate acoustic massive mimo for underwater communication first a. shaiq iqbal arif, member, ieee ... transmitted signal transmits in a form of

multipath and no single path is dominant. due to environmental conditions, signal scatters between transmitter and receiver and no single path remains dominant and reception of every path becomes necessary. figure 4: rayleigh fading channel ... **mimo design of active noise controllers for car interiors** ... - mimo design of active noise controllers for car interiors: extending the silenced region at higher frequencies simon berthilsson, annea barkefors and mikael sternad abstract active noise control can provide damping of low-frequency noise in car compartments by feedforward or feedback control. the complicated sound field in reverberant environments limits the spatial volume of efficient sound control ... **minimum mean square equalization techniques applicable for ...** - output (mimo) system in observing the performance of an optimum combiner that maximizes signal-to-interference-plus-noise ratio (sinr). the paper begins in section 2 from the fundamental perspective of **estimation of acoustic doubly dispersive randomly time ...** - signal processing operations to address the problem of surveillance and acoustic monitoring of underwater moving objects. from the point of view of computational complexity theory, the combined problem of search, detection, estimation, and tracking of underwater moving objects is considered an np-hard problem. [1]weichang li and j.c. preisig. estimation of rapidly time-varying sparse ... **underwater acoustic ofdm: algorithm design, dsp ...** - exploiting different ofdm signal structures, in both single-input single-output. lei wan--university of connecticut, 2014 (siso) and distributed multiple-input multiple-output (mimo) systems. second, this thesis investigates adaptive modulation and coding (amc) for underwater acoustic ofdm, where the transmitter parameters adapt to time-varying channel conditions. we develop an amc-ofdm ... **multi-array iterative receiver for underwater acoustic ...** - for underwater acoustic multi-carriers communication is still limited [18,19][18], an iterative receiver incorporating multiple-input, multiple-output (mimo) detection and sparse **optimal adaptive transmit beamforming for cognitive mimo ...** - acoustic environments. the simulations show the sensitivity of the localization performance of the method at different environmental prior uncertainties. index terms— mimo sonar, cognitive sonar, sequential waveform design, adaptive beamforming, underwater acoustics 1. introduction optimal beamforming for active arrays has been extensively studied in the past three decades. the optimization ... **underwater acoustic modem-challenges, technology and ...** - alternate is an acoustic signal transmission. the velocity of sound in sea water is determined by three factors: the temperature of the water, salinity and the hydrostatic pressure. the speed of sound in underwater is high compared to terrestrial. underwater acoustic channels have large delay spreads due to reverberation which further leads to strong frequency selectivity. since the acoustic ...

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