
Chaos Based Digital Communication Systems Operating Principles Analysis Methods And Performance Ev

digital communication using chaos and nonlinear dynamics - the purpose of this contribution is to provide a brief overview of digital chaos communication on the example of an optical and a wireless communication scheme. interested readers can find a more extended and in-depth discussion in Larson et al. (2006) [9].

2. synchronization based chaos communication using optoelectronic devices a new secure chaotic communication system - spread-spectrum communication system based on chaotic masking [1] "design of noncoherent receiver for analog spread-spectrum communication based on chaotic masking". Rulkov et al. reported a "digital communication using chaotic-pulse-position modulation" method [2]. Callegari et al. designed successful experiment "chaos-based **digital communication using chaotic-pulse-position ...** - chaos-based communication schemes is their susceptibility to noise and distortions in communication channels. in this paper, we review a new approach to communication with chaotic signals, which demonstrates good performance in the presence of channel distortions. this communication scheme is based upon chaotic

download digital communications using chaos and nonlinear ... - noise filtering in bandlimited digital chaos-based ... in digital chaos-based communications systems, each bit of information is transmitted using a different fragment of a chaotic signal [1, 2]. thus, it differs fundamentally from the conventional digital communication systems, where each symbol is associated with a constant and **study of anti-jamming capabilities of chaotic digital ...** - the anti-jamming performance of a chaos-based digital communication system. the specific system studied is the coherent chaos-shift-keying system. from these results, useful design data for chaos-based digital communication systems can be obtained. references [1] U. Parlitz, I.O. Chua, I. Kocarev, K.S. Halle and A. Shang, **wireless chaos-based communication systems: a ...** - wireless chaos-based communication systems: a comprehensive survey Georges Kaddoum abstract—since the early 1990s, a large number of chaos-based communication systems have been proposed exploiting the properties of chaotic waveforms. the motivation lies in the significant advantages provided by this class of non-linear signals. **techniques in secure chaos communication** - techniques in secure chaos communication a PhD thesis by YUU-SENG LAU (B. Eng. Elect. Eng., B. Comp. Sci.) School of Electrical and Computer Engineering Science, Engineering and Technology Portfolio RMIT University Melbourne, Victoria, Australia February 2006

optimum design for correlator-type receivers in chaos ... - abstract — in chaos-based digital communication systems, a correlator is normally used in the coherent detection of the signal. in this paper, an optimum design for such correlator-type receivers is presented. a chaos-based digital communication system with one chaos generator has been used to exemplify the performance of the design. **chaos based shift keying for covert communication** - chaos based shift keying for covert communication N.R. RAJAN, KRISHNAMOURTHY KARTHIKEYAN, MALLIGARAJ.M, MATHAVAN.K.S, PRAVEEN.S, SUSHIDHAR.J, ... of digital communication, systems have to be ... **chaos based cryptography : a new approach to secure ...** - chaos based cryptography : a new approach to secure communications Q.V. LAWANDE Theoretical Physics Division and B. R. IVAN and S. D. DHODAPKAR Reactor Control Division Introduction Cryptography is the science of protecting information during the privacy of communication under hostile conditions. **orthogonal chaotic vector shift keying in digital ...** - quadrature chaos shift keying (QCSK) reported in the literature, the noise rejection is improved by an increase in the 'inter-symbolic separation'. furthermore, a new method of characterizing non-linear processing elements in complex communication schemes has been presented. based on this, a simple **co-existence of chaos-based and conventional digital ...** - co-existence of chaos-based and conventional digital communication systems FRANCIS C.M. LAU and CHI K. TSE Department of Electronic and Information Engineering, The Hong Kong Polytechnic University Hung Hom, Kowloon, Hong Kong, China email: enclau@polyu & encktse@polyu abstract this paper studies the performance of selected chaos ... **71 african journal of information and communication ...** - user digital communication systems and chaos-based communications is given. this is followed by a discussion of the issues that arise in a hardware implementation for the chaos-based system. the design of the implemented transceiver is then described, along with the details of the testing employed in the evaluation of **synchronous digital signal communication system based on ...** - synchronous digital signal communication system based on chaotic masking 305 the information is not strict, such as video play, confidential meetings and other confidential multimedia streaming. in this paper, based on driving response synchronization method complete chaos masking secure communication, focusing on the experiment re- **suggested rules for designing secure communication systems ...** - suggested rules for designing secure communication systems utilizing chaotic lasers: a survey . QINGCHUN ZHAO and HONGXI YIN . abstract—chaotic communications based on semiconductor lasers have aroused great research interest since 1990s. physical-layer encryption using chaotic lasers is an alternative to transmit message rapidly and ... **spread spectrum digital communication system using chaotic ...** - the 10th experimental chaos conference { ECC10 June 3 - 6, 2008, Catania, Italy spread spectrum digital communication system using chaotic pattern generator by FABIO SIQUEIRA NETTO1 and MARCIO ... **digital chaotic synchronized communication system** - tures, beneficial to secure communication systems, both analog

and digital ones. two key features of deterministic chaos are the “noise-like” time series and the sensitive dependence on initial conditions [1, 2]. both of them grant to chaotic signals low probability of detection in chaotic transmissions and low probability of **performance analysis of a chaos-based multi-user ...** - performance analysis of a chaos-based multi-user communication system implemented in dsp technology ljiljana simi ć and stevan berber department of electrical and computer engineering **chaotic signal detection and estimation based on attractor ...** - and schemes based on digital chaos shift keying (dcsk). it is then demonstrated how this detection scheme can be used to develop a secure communication protocol using chaotic signals. using this protocol, both “1s” and “0s” are coded as signals that are spectrally identical yet lie on different manifolds, thus are easily separable from ... **do chaos-based communication systems really transmit ...** - do chaos-based communication systems really transmit chaotic signals? renato candido a, diogo c. soriano b, magno t.m. silva a, n, marcio eisencraft a a university of são paulo, brazil b universidade federal do abc, brazil article info article history: received 2 may 2014 received in revised form **noise filtering in bandlimited digital chaos-based ...** - noise filtering in bandlimited digital chaos-based communication systems rodrigo t. fontes and marcio eisencraft* polytechnic school of the university of sao paulo telecom and control engineering department {rfontes,marcio}@lcs.polip abstract in recent years, many chaos-based communication schemes were proposed. **design of secure digital communication systems using dcsk ...** - abstract—chaos-based communication can be applied advantageously only if the property of chaotic systems is suitably exploited. chaos communication has been studied for ... binary csk digital ... **co-existence of chaos-based and conventional digital ...** - in this section we study the performances of the chaos-based and conventional digital communication systems under a combined environment by computer simulations. the logistic map described in section 3.3 has been used to generate the chaotic sequences. for comparison, we also plot in each case the analytical results obtained in section 3.3. **performance of a new chaos-based communication scheme: the ...** - the chaotic signal based uwb system [1] was proposed to satisfy the requirement of the ieee 802.15.4a standard for low power consumption, low complexity, and low data rate communication. many chaos-based communication schemes have been proposed and studied in recent years, including chaos masking [2, 3], chaotic switching or chaos- **the dpsk signal noncoherent demodulation receiver based on ...** - international journal of bifurcation and chaos, vol. 26, no. 13 (2016) 1650216 (14 pages) c the author(s) doi: 10.1142/s0218127416502163 the dpsk signal noncoherent demodulation receiver based on the duffing oscillators array yongqing fu*, ‡, yan li*, §, linzhang †, ¶ and xingyuan li*, *college of information and communication ... **a new chaotic secure communication system - people** - a new chaotic secure communication system zhengguo li, kun li, changyun wen, and yeng chai soh abstract— this paper proposes a digital chaotic secure communication by introducing a concept of magnifying glass, which is used to enlarge and observe minor parameter mismatch so as to increase the sensitivity of the system. the encryption method is **design of secure digital communication systems using ...** - stated the pivotal role of chaos synchronization in secure communications [24–28]. chaotic signal masking [24], communication by signal reconstruction [25], communications-based active–passive decomposition [26], digital communication by chaotic switching [27], and digital communication based on in-phase and anti-phase synchronization **spread-spectrum communication using binary spatiotemporal ...** - any digital communication scheme, conventional or chaos-based: pseudo-random code generation. conventionally, code generation is accomplished by using linear shift-register generators that generate binary sequences such as the gold code for spread-spectrum communication [22]. such sequences are pseudo-random, and the idea is to convolute the ... **digital chaotic communications - smartech home** - digital chaotic communications approved by: dr. thomas d. morley, advisor dr. w. marshall leach, co-advisor school of mathematics school of electrical and **a combination scheme of cpwpm and bpsk for digital ...** - a combination scheme of cpwpm and bpsk for digital communication nguyen xuan quyen 1 , vu van yem 2 , thang manh hoang 2 , safwan el assad 3 and kyandoghere kyamakya **research paper performance analysis of chaotic ds-cdma ...** - figure 3. csk digital communication system chaos-based communication systems can be broadly classified into coherent and non-coherent based on the type of the demodulation technique used. coherent systems require an exact replica of the chaotic carrier to be reproduced at the receiver, there are two coherent receivers: • coherent receiver ... **chaos based image encryption and decryption** - image encryption algorithm based on s-des and logistic map. the encryption structure which combined the logistic map with s-des system is showed as fig. 2.1.[4] 2.5. chaos based image encryption, 2014 jun-xinchen, zhi-liangzhu, li-bozhang, chongfu, and haiyu proposed an efficient diffusion scheme for chaos-based digital image encryption. **springer series on signals and communication technology** - signals and communication technology functional structures in networks amln – a language for model driven ... for digital video broadcasting, 2nd ed. u. reimers isbn 3-540-43545-x digital interactive tv and metadata ... chaos-based digital communication systems operating principles, analysis methods, **list of independent citations - home.mite** - a6-c6 f. c. m. lau and c. k. tse: chaos-based digital communication systems springer verlag, berlin, heidelberg, 2003. a6-c7 t. wai-man: study of chaos-based communication systems in a multiple access environment. phd thesis, the hong kong polytechnic university, hong kong sar, china, 2003. **a chaos-based secure cluster protocol for wireless sensor ...** - a chaos-based secure cluster protocol for wireless sensor networks 523 also, it does not give any detail of key

distribution. what's more, spins is not fully specified. chaos is a kind of complex, nonlinear, non-balanced dynamic process in mathematics and physics. the features of chaos system such as sensitivity to initial values, **handbook of information and communication security** - based information security (subtitled with: \chaos-based block and stream ciphers in information security"). after a short introduction the basic paradigms to design chaos-based cryptosystems are described. these paradigms are called analog chaos-based cryptosystems and digital chaos-based cryptosystems and allow **a secure chaos-based image cryptosystem with an improved ...** - : a secure chaos-based image cryptosystem with an improved sine key generator characteristic. recent methods have been reported [24, 40] to avoid successful known/chosen plain image attacks by using plain image diffusion strategies. for instance, in [24] all plain image pixels are summed with chaotic sequences **chaos in dynamical systems - mit mathematics** - chaos in movies. canyouseeitnow? predictable chaotic. seymon dyatlov chaos in dynamical systems jan 26, 2015 3 / 23. media embedded by media9 [0.40(2014/02/17)] **cambridge university press edward ott frontmatter more ...** - frontmatter more information ... 0521811961 - chaos in dynamical systems, second edition edward ott frontmatter more information ... 0 0 0 9 0 **systems-11: vol. 40, 10, 1993 synchronization lorenz-b ...** - 626 iee transactions on circuits and systems-11: analog and digital signal processing, vol. 40, no. 10, october 1993 synchronization of lorenz-based chaotic circuits with applications to communications kevin m. cuomo, member, ieee, alan v. oppenheim, fellow, ieee, and steven h. strogatz abstract- a circuit implementation of the chaotic lorenz **chaos-based fm signals: application and implementation issues** - chaos-based fm signals: application and ... this is the case in communication schemes such as fm ... digital object identifier 10.1109/tcsi.2003.815222 **masking digital image using a novel technique based on a ...** - masking digital image using a novel technique based on a transmission chaotic system and spiht coding algorithm ... the chaos-based encryption has suggested a new and efficient way to deal with the intractable problem of ... in this work a communication system based on chaos encryption and spiht coding is realized. the global scheme of **lorenz-based chaotic secure communication schemes - ubicc** - chaos based secure communication has been of much interest in the recent time since it offers potential advantage over conventional methods due to its simplicity [3] and high unpredictability which means higher security. besides, analog implementation is possible [5]. many chaotic secure communication schemes **journal of computing: a chaos-based image encryption ...** - the chaos-based encryption was first proposed by matthews [9], since then, many chaos-based digital image encryption schemes have been proposed and analyzed in the literature. among these encryption schemes, one-dimensional and two-dimensional chaotic systems, such as logistic map, unimodal skew tent map, **simulation of wireless communication systems using matlab** - simulation of wireless communication systems using matlab dr. b.-p. paris dept. electrical and comp. engineering george mason university fall 2007 paris ece 732 1. matlab simulation frequency diversity: wide-band signals discrete-time equivalent system digital matched filter and slicer monte carlo simulation ... completes the simulator for the ... **stability of observer-based chaotic communications for a ...** - stability of observer-based chaotic communications for a class of lur'e systems ... methods of chaos communication can be classified into the following basic categories: (a) chaos ... munication and csk for digital communication. in the sequel, we will focus on analog communication **chaotic pulse position modulation: a robust method of ...** - a number of chaos-based communication schemes have been suggested [3], but many of these systems are very sensitive to distortions, filtering, and noise. chaos-based communication systems and ics appear to form excellent partners, with each contributing important features. a chaotic system, as a part of an ics, can improve the communication ... **shujun li , gonzalo alvarez, zhong li and wolfgang a. halang** - (for a comparison of chaos and cryptography, see table 1 in [1]). basically, there are two major types of chaos-based cryptosystems: analog chaos-based secure communication systems and digital chaos-based ciphers, which are designed employing completely different principles. almost all analog chaos-based secure communication **8803 - nonlinear dynamics and applications spring 2018** - chaos. quantification of chaos. basics of nonlinear time series analysis. applications to chaos synchronization, chaos-based communication, chaos control, and neuromorphic computing. tia: systems and controls. prerequisites math 2401 or 2411 or equivalent. math 2403 or 2413 or equivalent. cee/isy/math 3770 or isye 2027 or equivalent. textbooks

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