

UNIVERSITY OF MACAU
FACULTY OF SCIENCE AND TECHNOLOGY
DEPARTMENT of MATHEMATICS

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**“Blind Signal Processing for Electronic
Reconnaissance”**

by

Prof. Xiangao Huang

The Air Force University of Engineering, Xi'an

Date : 11/05/2010 (Tuesday)
Time : 16:30 – 17:30
Venue : JM13

Abstract

In this talk, I will introduce my work on signal processing which is divided into four topics: blind estimating carrier frequency of BPSK signal modulated by random code sequence in low SNR based on stochastic resonance; blind demodulating random code sequence on carrier frequency of BPSK signal in low SNR based noise reduction; blind despreading spread spectrum code segment and information code segment from spreaded spectrum code segment based on measuring the complexity of 0 1 symbolic sequence; decrypting stream ciphers based on reconstructing theory of Boolean function in blind signal processing for electronic reconnaissance. If it is possible, I will also introduce my future research plans.

Biography

Personal data:

Full name: Xiangao Huang

Position: The Air Force University of engineering, Xi'an.

Education:

09/1996----07/2001 PhD Xi'an Jiaotong University

Research interests:

chaos dynamics system
the stochastic resonance
Complexity
blind source separation
nonlinear noise reduction
cryptograph

Selected papers:

Xiangao Huang, Jianxue Xu, Wei Huang, Zejun Lu, Unmasking chaotic mask by a wavelet multiscale decomposition algorithm. *International Journal of Bifurcation and Chaos*, 11(2001)561.

Xiangao Huang, et al, Reconstructing the Nonlinear Filter Function of LILI-128 Stream Cipher Based on Complexity. <http://arxiv.org/abs/cs/0702128>.

Xiangao Huang, et al, "Blind reconnaissance of the pseudo-random sequence in DS/SS signal with negative SNR", *Science in China Series F: Information Sciences*, Vol.50, pp.510,2007.

Xiangao Huang, et al, "Research into Noncoherent Demodulation for PSK Modulation Signal in Low SNR Based on Noise reduction Algorithm" accepted by The 3rd International Conference on Space Information Technology, Beijing, 2009.

Xiangao Huang, et al, "Research onto Blind Despreading for Spreaded Sequences Based Complexity Theory and Algorithms" accepted by The 3rd International Conference on Space Information Technology, Beijing, 2009.

ALL ARE WELCOME!