

**Distinguished Lecture Series 2008****Sunzi Theorem and Signal Processing**

by

Professor Xiang-Gen Xia**Dept of Electrical and Computer Engineering
University of Delaware, USA****Date: 23 July 2008, Wednesday****Time: 10:30 a.m. – 12:00 noon****Venue: SHIAE Conference Room****Room 702, 7/F, William M.W. Mong Engg., CUHK****Abstracts**

Sunzi theorem is also called Chinese remainder theorem (CRT). It is to determine a large integer from its multiple remainders, which is well-known not robust. In this talk, we first talk about its application in frequency estimation in signal processing. We then introduce a generalized CRT that determines multiple integers from multiple remainder sets. Then, we introduce a robust CRT and a robust phase unwrapping. We finally introduce several applications of robust CRT and robust phase unwrapping in SAR imaging of moving targets.

Biography of the Speaker

Xiang-Gen Xia received his B.S. degree in mathematics from Nanjing Normal University, Nanjing, China, and his M.S. degree in mathematics from Nankai University, Tianjin, China, and his Ph.D. degree in Electrical Engineering from the University of Southern California, Los Angeles, in 1983, 1986, and 1992, respectively.

He was a Senior/Research Staff Member at Hughes Research Laboratories, Malibu, California, during 1995-1996. In September 1996, he joined the Department of Electrical and Computer Engineering, University of Delaware, Newark, Delaware, where he is the Charles Black Evans Professor. He was a Visiting Professor at the Chinese University of Hong Kong during 2002-2003, where he is an Adjunct Professor. Before 1995, he held visiting positions in a few institutions. His current research interests include space-time coding, MIMO and OFDM systems, and SAR and ISAR imaging. Dr. Xia has over 170 refereed journal articles published and accepted, and 7 U.S. patents awarded and is the author of the book *Modulated Coding for Intersymbol Interference Channels* (New York, Marcel Dekker, 2000).

Dr. Xia received the National Science Foundation (NSF) Faculty Early Career Development (CAREER) Program Award in 1997, the Office of Naval Research (ONR) Young Investigator Award in 1998, and the Outstanding Overseas Young Investigator Award from the National Nature Science Foundation of China in 2001. He also received the Outstanding Junior Faculty Award of the Engineering School of the University of Delaware in 2001. He is currently an Associate Editor of the *IEEE Transactions on Wireless Communications*, the *IEEE Transactions on Vehicular Technology*, the *Journal of Communications (JCM)*, and the *Journal of Communications and Networks (JCN)*, and *Signal Processing (EURASIP)*. He was a guest editor of *Space-Time Coding and Its Applications* in the *EURASIP Journal of Applied Signal Processing* in 2002. He served as an Associate Editor of the *IEEE Signal Processing Letters* during 2003 to 2008, the *IEEE Transactions on Signal Processing* during 1996 to 2003, the *IEEE Transactions on Mobile Computing* during 2001 to 2004, and the *EURASIP Journal of Applied Signal Processing* during 2001 to 2004. He is Technical Committee Chair of the *Signal Processing Symp.* in *Globecom 2007* in Washington, D.C., and the General Co-Chair of *ICASSP 2005* in Philadelphia.

***** ALL ARE WELCOME *******ENQUIRIES: SHIAE, Tel: 3163 4351**** Light refreshment will be served before the lecture on 7/F **