THE CHINESE UNIVERSITY OF HONG KONG
Institute of Network Coding
and
Department of Information Engineering
Seminar

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Entropy Power Inequality: Proofs and Applications
by
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and
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Date : **19 January 2011 (Wednesday)**
Time : **11:00 am - 12:00 pm**
Venue : **Room 833, Ho Sin Hang Engineering Building**
The Chinese University of Hong Kong

Abstract

The entropy power inequality (EPI), first put forth by Shannon in his 1948 paper, "A Mathematical Theory of Communication," is one of the most profound and mysterious results in information theory. In this talk I go over several different proofs of the EPI published in the literature over the course of sixty years, as well as the relationship of the EPI to several other inequalities. I also discuss key applications of the EPI, in particular its role in the proof of converse results concerning Gaussian channels. I encourage the audience to bring paper and pencil to go over some of the calculations with me.

Biography

Dongning Guo joined the faculty of Northwestern University, Evanston, IL, in 2004, where he is currently an Associate Professor in the Department of Electrical Engineering and Computer Science. Since October 2010, he has been a Visiting Scholar in the Institute of Network Coding at Chinese University of Hong Kong, while on academic leave from Northwestern. He received the B.Eng. degree from the University of Science & Technology of China, the M.Eng. degree from the National University of Singapore, and the M.A. and Ph.D. degrees from Princeton University, Princeton, NJ. He was a R&D Engineer in the Center for Wireless Communications (now the Institute for Infocom Research), Singapore, from 1998 to 1999. He held a visiting position at the Norwegian University of Science and Technology in summer 2006. He is an Associate Editor of IEEE Transactions on Information Theory in the area of Shannon Theory.

Dongning Guo received the Huber and Suhner Best Student Paper Award in the International Zurich Seminar on Broadband Communications in 2000 and is a co-recipient of the IEEE Marconi Prize Paper Award in Wireless Communications in 2010. He is also a recipient of the National Science Foundation Faculty Early Career Development (CAREER) Award in 2007. His research interests are in information theory, communications, and networking.

**ALL ARE WELCOME **

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