



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

**Channel-Hopping Sequence Design and Collision Resolution in
Cognitive Radio Ad Hoc Networks**

by
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Date : 23rd July, 2018 (Mon.)
Time : 11:00am – 12:00noon
Venue : Room 833, Ho Sin Hang Engineering Building
The Chinese University of Hong Kong

Abstract

With the evolution of the Internet of Things, multimedia wireless communication services are expected to grow exponentially and impose massive tremendous traffic demand and spectrum scarcity. Cognitive radio (CR) has recently been received attention as one of the technologies supporting such applications. In this seminar, the operating principle of CR ad hoc networks and distributive channel-hopping (CH) rendezvous method are introduced. Categories of CH sequences and their design criteria and metrics are investigated. The constructions of CH sequences, such as a novel family of asynchronous-asymmetric CH sequences that carry a unique multiple maximum-time-to-rendezvous property, will be presented. As channel collisions are inevitable in CR ad hoc networks, the concept of channel resolution is also introduced. Finally, a recently proposed RTS/CTS channel-resolution mechanism will be studied.

Biography

Wing C. Kwong received the Ph.D. degree in electrical engineering from Princeton University, Princeton, New Jersey, USA, in 1992. He is currently a full professor with the Department of Engineering at Hofstra University, New York. He has co-authored two technical books and many professional articles on coding theory and its applications to optical and wireless code-division multiple access. He has served technical program committees in many international conferences and given seminars and tutorials in various cities and countries. His research interests include code theory, optical and wireless communication systems and multiple-access networks, and ultrafast all-optical signal processing techniques.

Dr. Kwong was the recipient of the NEC Graduate Fellowship awarded by NEC Research Institute, Princeton, NJ, USA in 1990 and 1991. He received the Young Engineer Award from the IEEE (Long Island chapter) in 1998. He received the 2016 Teacher of the Year award from the School of Engineering and Applied Sciences, Hofstra University. He had been an Associate Editor of the IEEE Transactions on Communications until 2017.

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