



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

**Deletion codes in the high-noise and high-rate regimes;
and An exact spectrum formula for the maximum size of
finite length block codes**

by

Dr. Carol Wang

**Department of Electrical and Computer Engineering
National University of Singapore**

**Date : 25 July, 2017 (Tue.)
Time : 11:00am – 12:00noon
Venue : Room 1009, William M.W. Mong Engineering Building
The Chinese University of Hong Kong**

Abstract

This talk covers two different results in coding theory, one from a constructive perspective, and one from an information theoretic perspective. In the first half, we show how to efficiently construct codes which can correct a constant fraction of symbol deletions, including binary codes with rate approaching 1, and non-binary codes which can correct an error fraction approaching 1 with constant rate.

In the second half, we discuss a new formula which expresses the size of the largest code of a certain minimum distance in terms of distributions on codewords. Our formula holds for extremely general distance measures, and also gives bounds on the asymptotic behavior of this quantity.

Biography

Carol Wang received her Bachelor's degree from the California Institute of Technology in 2010 and her Ph.D. in 2015 from Carnegie Mellon University, supported by a National Science Foundation graduate research fellowship. She is now a research fellow in the Department of Electrical and Computer Engineering at the National University of Singapore. Dr. Wang works primarily in algebraic coding theory, and is always interested in extending coding-theoretic techniques to new coding models.

**** ALL ARE WELCOME ****