



**THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY**

**Department of Mathematics**

**SEMINAR ON PURE MATHEMATICS**

**Deep Holes of RS-codes and non RS-codes**

by

**Prof. Haiyan ZHOU**

**School of Mathematical Sciences  
Nanjing Normal University**

**Abstract**

A deep hole is the extremal structure that reaches the maximum error distance of an error-correcting code. Determining the deep holes of error-correcting codes is of great significance in coding theory. Reed-Solomon codes (RS-codes) are a very important class of error-correcting codes in both theoretical research and practical applications. The study of their structure has always been a hot topic in coding theory and theoretical computer science. The study of the construction and related properties of non-Reed-Solomon codes is also a hot topic in recent years. This report reviews the research progress on deep holes of RS-codes and non RS-codes, including the development of the problem, research methods, main conclusions, and related finite geometry and computational issues.

**Date : 04 February 2025 (Tuesday)**

**Time : 3:00p.m.-4:00p.m.**

**Venue : Room 2408 (Lifts 17/18)**

*All are Welcome!*