



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PURE MATHEMATICS

**Generalized Covering Radii
of Reed–Muller Codes**

by

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Abstract

In this talk, we study generalized covering radii, a fundamental property of linear codes that captures the trade-off between storage, latency, and access complexity in linear data-query protocols such as private information retrieval (PIR). We introduce several equivalent definitions, highlighting the combinatorial, geometric, and algebraic perspectives of this notion. We then derive lower and upper bounds on the generalized covering radii of Reed–Muller codes and determine their exact values in certain extreme cases.

Date : 25 March 2026 (Wednesday)

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

Zoom meeting :

<https://hkust.zoom.us/j/93934968696?pwd=hXcw7b9XKBL4ccvwdeYKJYMIvE6KF6.1>

Meeting ID: 939 3496 8696

Passcode: 115361

All are Welcome!