For favour of Posting

THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

PHD STUDENT SEMINAR

Estimating Upper bound of Kissing number via Semidefinite Programming

By

Mr. Yueyan JIANG

Abstract

Kissing number is defined as the maximum number τ_n of non-overlapping unit spheres that can be arranged in n dimension Euclidean space such that each of them touches a common unit sphere. Kissing number is connected to combinatorics and coding problems. The exact value of τ_n is only known when $n = 1,2,3,4,8,24$. For other dimensions, we only know some upper bound and lower bound.

The kissing number problem can be converted to optimization problems, which are composed of some necessary conditions of original problem. One of the optimization plans is using Semidefinite Programming (SDP) which gives new upper bound for the kissing. In the seminar, we will introduce our method which extends the SDP plan in the previous research.

Date : 9 May 2025 (Friday)
Time : 2:00pm
Venue : Room 4472 (near Lifts 25/26)

All are Welcome!