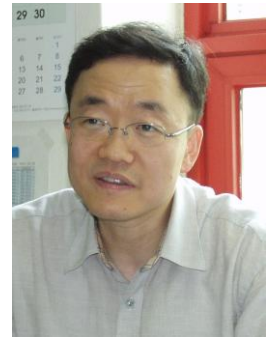中央研究院數學研究所
Institute of Mathematics
Academia Sinica

國立台灣大學數學系
Department of Mathematics
National Taiwan University

Lakeside Lecture Series

Speaker: Professor Jun-Muk Hwang

(Korea Institute for Advanced Study)

Title: Sphere packing for symplectic lattices

Abstract: Symplectic lattices are lattices in Euclidean space with certain extra-symmetries associated to Hermitian forms. They correspond to principally polarized abelian varieties in algebraic geometry. Classical examples are given by period lattices of compact Riemann surfaces. Our theme is the density of sphere packing for symplectic lattices. In their seminal work in 1994, Buser and Sarnak showed that period lattices of compact Riemann surfaces give remarkably poor sphere packing. Following Buser-Sarnak's work, many interesting relations between the density of sphere packing for symplectic lattices and algebro-geometric properties of corresponding abelian varieties have been discovered. We will give an overview of this subject with a report on a recent work on period lattices of Prym varieties, another important class of symplectic lattices arising from algebraic geometry.

Date: Nov. 12th , 2012

Time: 14:00-15:00

Venue: Room 202, Astro-Math. Building

Refreshment: 13:30-14:00

Organizers: Yi-Chiuan Chen, Kin-Ming Hui, Jeremy Wong, Jeng-Daw Yu