

Graduate Seminar

Deping Ye, Memorial University

Thursday, October 17, 2013

HH-3017 @ 1p.m.

Invitation to Geometry of Convexity and Quantum States in High Dimension

Abstract:

Many objects in applications are convex. For instance, the set of separable quantum states on a Hilbert space with tensor product is convex and plays a fundamental role in Quantum Information Theory.

Convex Geometry studies the geometry of convex bodies. In particular, we are interested in (affine) isoperimetric inequalities which provide lower and/or upper bounds for functionals on convex bodies in terms of volume. Those (affine) isoperimetric inequalities are fundamental in applications.

In this talk, I will introduce some classical (affine) isoperimetric inequalities and also present some recent results in this direction. In particular, applications to Quantum Information Theory will be discussed.