Lakeside Lectures

Speaker: Prof. Mei-Chi Shaw (蕭美琪)

(Notre Dame University)

Title: Hearing Pseudoconvexity in Complex Manifolds

Abstract:

   The Cauchy-Riemann equations are fundamental in one and several complex variables. Holomorphic functions, for example,   satisfy the homogeneous   Cauchy-Riemann equations. In complex Euclidean space of dimension $n \geq 2$, the necessary and sufficient condition for the solvability of the Cauchy-Riemann equations is that the domain is pseudoconvex.

   In this talk we relate pseudoconvexity with the vanishing of L^2 Dolbeault cohomology groups.   On a pseudoconvex domain in   a complex manifold, the L^2 Dolbeault cohomology might not even be Hausdorff. Recent results on the L^2 closed range property for $\bar{\partial}$ on an annulus between two pseudoconvex domains will be discussed.   One can even characterize such domains through the spectral theory of their L^2 Dolbeault cohomology groups, thus hearing pseudoconvexity of the boundary.
(Joint work with Debraj Chakrabarti, Siqi Fu, and Christine Laurent-Thiébaut).

Date: Jan. 15 (Mon), 2018

Time: 14:00-15:00

Venue: Room 202, Astro-Math Building (NTU Campus)

Refreshment: 13:30

Organizers: I-Kun Chen, Volker Elling, Chun-Yen Shen