NCTS
National Center for Theoretical Sciences

Non-linear Elliptic Equations on
Canonical Metrics on Manifolds

Time 2024.5.14 & 2024.5.21 11:00-14:30

Venue Room 440+Online Meeting, Astronomy-Mathematics Building, NTU

Speakers

Chao-Ming Lin   Ohio State University
Ming-Yuan Chang   Institute of Mathematics, Academia Sinica

Organizer

Mao-Pei Tsui   National Taiwan University

Background & Purposes

This lecture series explores nonlinear PDE on Riemannian manifolds: non-linear elliptic equations on Kähler manifolds, an L^2-estimate for the Dirac-Dolbeault operator for line bundles with mixed curvature and the elliptic theory of G_2-structures.

The first part focuses on the work of G. Székelyhidi concerning a priori estimates for fully non-linear elliptic equations on compact Kähler manifolds. These estimates play a crucial role in understanding the regularity of solutions to such equations.

The second part explores the ellipticity of the G_2 holonomy equation on manifolds with boundaries, developed by S.K. Donaldson. This approach leads to a deformation theory and the existence of certain geometric objects called G_2 cobordisms.

Outline & Descriptions

The series comprises four lectures:
Professor Chao-Ming Lin
05/14, 05/21 11:00-12:30
will give two talks and
Ming-Yuan Chang
05/14, 05/21 13:30-14:30
will deliver two talks. There is lunch break from *12:30-13:30*.

This lecture series is targeted towards students or mathematicians with a background in differential geometry and analysis on manifolds. Familiarity with basic concepts of Kähler manifolds and elliptic equations would be beneficial.

Registration   Information