Convergence Rate Estimates for Aleksandrov’s Solution to the Monge–Ampère Equation

Speaker: Genggeng Huang, Fudan University
Time: 2:00 pm - 3:00 pm, Thursday, October 17, 2019
Venue: Room 264, Geography Building, Zhongbei Campus, ECNU

Abstract

In this talk, we talk about the convergence rate estimates for convex solutions to the Dirichlet problem of the Monge-Ampère equation \( \det D^2u = f \) in \( \Omega \), where \( f \) is a positive and continuous function and \( \Omega \) is a bounded convex domain in the Euclidean space \( \mathbb{R}^n \). We approximate the solution \( u \) by a sequence of convex polyhedra \( v_h \), which are generalised solutions to the Monge-Ampère equation in the sense of Aleksandrov, and the associated Monge-Ampère measures \( \nu_h \) are supported on a properly chosen grid in \( \Omega \). We will derive the convergence rate estimates for the cases when \( f \) is smooth, Hölder continuous, and merely continuous. This is a joint work with Prof. Xu-Jia Wang and Dr. Haodi Chen.

Biography

Huang Genggeng graduated from Fudan University in 2013 and subsequently worked as a postdoctoral fellow and visiting scholar at Shanghai Jiaotong University, Taiwan University, and Australian National University. In 2017, he joined Fudan University, and his main research interests are nonlinear elliptic partial differential equations and their applications.