

MINI-WORKSHOP ON ALGEBRAIC GEOMETRY

Jun. 09, 2023

Room 106, Shanghai Center for Mathematical Sciences

Title: Minimal model program for generalized pairs

Abstract: Generalized pairs are a natural structure in birational geometry that first appeared in Kodaira's canonical bundle formula for elliptic fibrations. They were formally introduced by Birkar and Zhang in 2014 as part of their study of effective Iitaka fibrations and have since become a central topic in modern-day birational geometry. In particular, this structure have been essentially utilized in the proof of the Borisov-Alexeev-Borisov conjecture and the McKernan-Shokurov conjecture.

Based on a series of works (Hacon-Liu, Liu-Xie, Liu-Xie, Xie, Tsakanikas-Xie, Chen-Liu-Xie) in the past several years, we have established the foundation of the minimal model program (cone theorem, contraction theorem, and the existence of flips) for generalized pairs. In our talks, we will introduce these results and discuss the central ideas of the proof of these results.

Speakers

Jihao Liu, Northwestern University Time:14:30-15:30

I will introduce the statements of our results, and discuss the key ideas of the proofs of the cone theorem and the existence of a special log minimal model for generalized pairs.

Tea Break: 15:30-16:00

Lingyao Xie, University of Utah Time:16:00-17:00

I will discuss the key ideas of the proofs of the existence of flips, the contraction theorem, and the vanishing theorems. I will also discuss the existence of good minimal models for generalized pairs polarized with ample divisors.

Organizer

Meng Chen, Jingjun Han, Chen Jiang, Zhi Jiang