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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

ALGEBRA AND GEOMETRY SEMINAR

Speaker: **Prof. Yang ZHOU**
Shanghai Center for Mathematical Sciences, Fudan University

Venue: **Room 1410** (Lifts 25/26)

Lecture series: Wall-crossing formula I-IV

Date	Time	Title
15 Jan 2024 (Mon)	**3:00-4:30pm**	**I) Stable quasimaps and their wall-crossing formula**

Abstract

In this lecture, we will introduce the notion of quasimaps and their stability conditions. We will establish the essential geometric properties of the moduli of epsilon-stable quasimaps. After defining the small I-function using quasimap graph space, we will introduce the quasi-map wall-crossing formula and explain its geometric meaning.

17 Jan 2024 (Wed)	**3:00-4:30pm**	**II) The master space technique and its application to weighted pointed curves**

Abstract

The master space technique is an important tool for proving the wall-crossing formula. In this lecture, we will demonstrate this technique via a simple example, namely, the moduli of weighted pointed curves.

22 Jan 2024 (Mon)	**3:00-4:30pm**	**III) Entangled tails and the wall-crossing formula**

Abstract

In this lecture, we will introduce the notion of weighted prestable curves with entangled tails. Combining that with the master space technique, we will prove the quasimaps wall-crossing formula for a general GIT quotient.

24 Jan 2024 (Wed)	**3:00-4:30pm**	**IV) Applications and generalizations**

Abstract

In this lecture, we will discuss some applications and generalizations of the quasimaps wall-crossing formula. The applications include the genus 1 Lefschetz hyperplane principle and the genus 0 orbifold Gromov-Witten invariants for non-convex complete intersections. One generalization (of the idea of stable quasimaps) is a notion of Omega-stable Mixed-Spin-P fields for GIT quotients.

All are Welcome!