THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

PHD STUDENT SEMINAR

Chern character operators and W algebra on cohomology of Hilbert schemes

By

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Abstract

In this talk, we will explore the Chern characters of tautological sheaves on Hilbert schemes, and demonstrate how they act as operators on the cohomology of these schemes. Furthermore, we will show that these Chern characters, together with Nakajima's operators, generate a W-algebra action. The Hilbert scheme is a fundamental moduli space that parametrizes length-n subschemes of a fixed scheme. It has been extensively studied in algebraic geometry and mathematical physics due to its deep connections to various areas of mathematics. The W-algebra is a key object in conformal field theory, and has rich connections to representation theory, algebraic geometry, and beyond. By establishing the relationship between the Chern characters of tautological sheaves and the W-algebra action, this work has shed important light on the intricate structures underlying Hilbert schemes and their cohomology.

Date : 14 May 2024 (Tuesday)

Time : 2:00pm

Venue : Room 4472 (Lifts 25-26)

All are Welcome!