



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PURE MATHEMATICS

Soergel Bimodules and Kazhdan-Lusztig Polynomials

by

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Abstract

Let \mathfrak{g} be a semisimple Lie algebra. The Kazhdan-Lusztig conjecture expresses the multiplicity of a simple \mathfrak{g} -module in a Verma module in terms of the Kazhdan-Lusztig polynomials. These polynomials are encoded in the combinatorics of the Hecke algebra of the Weyl group of \mathfrak{g} , but the Hecke algebra is invisible from the representations of \mathfrak{g} . This conjecture was proved first by Beilinson-Bernstein and Brylinski-Kashiwara using geometry. More recently Soergel found a more algebraic approach, using so-called Soergel bimodules. In this (series of) talk(s) we briefly introduce the Kazhdan-Lusztig conjecture, and Soergel's approach to this conjecture.

Date : 1 December 2023 (Friday)

Time : 1:30pm – 2:30pm*

Venue : Room 4503 (Lifts 25/26)*

All are Welcome!