CENTRE
DE RECHERCHES
MATHÉMATIQUES

Algèbres non commutatives, théorie des représentations et fonctions spéciales
23 mai - 10 juin 2022

Non-commutative algebras, representation theory and special functions
May 23 – June 10, 2022

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p-Kazhdan Lusztig polynomials in representation theory

We provide an elementary introduction to Elias—Williamson's Soergel diagrammatics and p-Kazhdan—Lusztig theory and discuss the applications in representation theory. In particular we will discuss the recent proof of (generalised versions of) Libedinsky—Patimo's conjecture, which states that certain simple characters of affine Hecke algebras are given in terms of p-Kazhdan—Lusztig polynomials and of Berkesch—Griffeth—Sam's conjecture which states that the unitary representations admit cohomological constructions via BGG resolutions. This is joint work with Anton Cox, Amit Hazi, Emily Norton, and Jose Simental.