

Abstract

In this talk I will introduce a new realization of the crystal of affine \mathfrak{sl}_ℓ using the modular representation theory of the affine Hecke algebras H_n of type A and their level two cyclotomic quotients with Hecke parameter being a primitive 2ℓ th root of unity. We categorify the Kashiwara operators for the crystal as the functors of taking socle of certain two-steps restriction and of taking head of certain two-steps induction. The main results generalize the earlier work of Grojnowski and Vazirani on the crystal of affine \mathfrak{sl}_ℓ and the affine Hecke algebras of type A at a primitive ℓ th root of unity. The talk is based on a joint work with Lin Huang.