

A new Weyl group action and a cluster structure for representations of shifted quantum groups

Shifted quantum affine algebras and their truncations emerged from the study of quantized Coulomb branches. I will report on joint work with Geiss and Leclerc: we show that the Grothendieck ring of the category \mathcal{O} for the shifted quantum affine algebras has the structure of a cluster algebra. The cluster variables of a class of distinguished initial seeds are certain formal power series defined from a new Weyl group action introduced in joint work with Frenkel. These cluster variables satisfy a system of functional relations called the QQ-system. We will also discuss a connection with recent work of Koroteev-Zeitlin involving q -opers.