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Shuffle algebra structure for stable envelopes

Tuesday 13 September 2022 09:00 (30 minutes)

The notion of stable envelopes of a symplectic resolution, developed by Okounkov and his coauthors in the last decade, lies at the heart of the geometric approach to the represen-tation theory of quantum groups and q-difference equations. Nakajima quiver varieties form a rich family of symplectic resolutions, whose geometry governs the representation theory of Kac-Moody Lie algebras and, via stable envelopes, their q-deformations. In this talk, I will introduce an inductive formula that produces the stable envelopes of an arbitrary Nakajima variety, taking as input the stable envelopes of two other Nakajima varieties with smaller di-mension and framing vectors. Some explicit examples will be also discussed. This formula is a wide generalisation earlier results inherited form the theory of weight functions. Time per-mitting, I will also discuss connections with cohomological Hall algebras (CoHa) and Cherkis bow varieties in relation to 3d Mirror symmetry, which are object of ongoing research.

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