

Quiver varieties and derived categories

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This is a report on ongoing joint work with Sarah Scherotzke. Let Q be a Dynkin quiver. As Nakajima, Hernandez-Leclerc and Kimura-Qin have shown, graded affine quiver varieties are of great use in constructing monoidal categorifications of cluster algebras associated with Q . Leclerc-Plamondon have shown that thanks to an old result of Lusztig's, these varieties can be interpreted as varieties of representations of a category, the Nakajima category. We study the homological properties of this category and relate its module category to the derived category of Q .