

Cluster category of type A double infinity

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Cluster categories have been introduced about 8 years ago by Buan, Marsh, Reiten, Reineke and Todorov with the hope of understanding some of the combinatorics of the famous cluster algebras. Given any finite acyclic quiver Q , the cluster category $C(Q)$ attached to Q is defined. This is a nice Hom-finite 2-Calabi—Yau triangulated category. This construction actually works for any infinite quiver that is locally finite without infinite paths. In this talk, we will consider the cluster category attached to a quiver of type A double infinity and show that this category has a geometric realization. Indecomposable objects, morphisms, extensions and cluster-tilting subcategories will all be described.

This is joint work with Shiping Liu.

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