

# t-deformations of Grothendieck rings as quantum cluster algebras

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It is known that some Grothendieck rings of categories of representations of quantum affine algebras can be endowed with cluster algebras structures. This is true for example for certain categories  $\mathcal{O}$  containing the category of finite-dimensional representations. On the other hand, certain Grothendieck rings of categories of finite dimensional representations admit remarkable t-deformations, which are linked to quiver varieties and are useful to compute characters. The aim of this work is to obtain such t-deformations in the context of categories  $\mathcal{O}$ . Our approach is based on quantum cluster algebras.