

# Decomposition formulas for representations of quantum affine algebras

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Even though finite-dimensional representations of quantum affine algebras are well-studied, some basic questions are still hard to answer. In type A, some families of representations, such as regular representations, snake modules or alternating snakes modules are combinatorially better behaved than generic representations. For these, some formulas can be written for the decomposition of classes of simple representations into alternate sums of classes of standard representations, giving access to information such as the  $(q-)$ characters. These decompositions can also be related to the cluster algebra structure of the category.