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Adriano Moura* (aamoura@ime.unicamp.br), Universidade Estadual de Campinas,
Departamento de Matemática, Campinas, SP 13083-859, Brazil. *Prime representations and self
extensions of representations of quantum affine algebras.*

Given an abelian category, one of the natural questions to be addressed is that of understanding the space of extensions between its simple objects. For the category of finite-dimensional representations of an affine Kac-Moody algebra, this question has been answered in the last few years. The quantum version of this category is far more complicated and the answer to this question remains open. We shall discuss some ideas towards the answer of this problem and show, via examples, that the quantum answer is different from the classical one in an essential way. An interesting feature of the category of finite-dimensional representations of a quantum affine is that it has simple objects which are not prime, i.e., which are isomorphic to a tensor product of two nontrivial simple objects. It is then natural to try to classify the prime ones. Although this classification is also unknown, the amount of known examples of prime modules has been growing. In the main part of this talk we shall present results from a joint paper with V. Chari and C. Young relating the study of prime representations to that of the space of self extensions of simple modules. (Received August 27, 2012)