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Yuri Berest* (berest@math.cornell.edu), Department of Mathematics, Cornell University, Ithaca, NY 14853-4201. *A-infinity Modules and Quiver Varieties*.

For certain classes of quantum algebras there is a simple geometric classification of projective modules in terms of associated quiver varieties. A prototypical example is the Calogero-Moser correspondence relating the space of ideal classes of the (first) Weyl algebra to the family of Calogero-Moser algebraic manifolds. The talk will discuss a new construction of such correspondences based on some simple ideas from homotopical algebra. If time permits, the example of the Weyl algebra and (noncommutative) Kleinian singularities will be examined in more detail. (Received September 19, 2005)