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**Yiqiang Li\*** (yqli@math.ksu.edu), Department of Mathematics, Kansas State University,  
Manhattan, KS 66502, and **Zongzhu Lin**. *Algebras arising from quivers with loops*.

In [L3], Lusztig extended his geometric construction of canonical basis of quantized Kac-Moody Lie algebras associated to quivers without loops to quivers with loops to obtain an algebra. But it is not clear whether these algebras are generated by a set of generators associated to each vertex. In this paper, we prove that the subalgebras generated by those generators have a canonical basis consisting of non-negative integral linear combinations of the canonical basis elements Lusztig constructed. In many cases, these two algebras are the same, but the canonical basis could be still different from Lusztig's. We use the approach in [KS] by splitting the Springer type resolution into two steps. We show that these algebras are isomorphic to the negative part of the quantized enveloping algebra of some generalized Kac-Moody Lie algebras (or Borcherds algebras) with infinitely many imaginary simple roots. (Received September 19, 2005)