1024-16-93 **Linhong Wang*** (`lhwang@temple.edu`), Temple University, Department of Mathematics, Broad & Montgomery Aves, 038-16, Philadelphia, PA 19122. *Completions of Quantum Coordinate Rings.* Preliminary report.

Recently, the general skew power series ring $R[[y; \tau, \delta]]$ in one variable y over a coefficient ring R, with automorphism τ and left τ-derivation δ, has appeared in the work of Venjakob and Schneider.

In this talk, we show that the approach of Venjakob and Schneider can be applied to completions of quantum algebras arising from certain quadratic relations. Examples of such quantum algebras include quantum matrices $\mathcal{O}_{\mathbf{q}}(M_n(k))$ but not quantum Weyl algebras. We construct power series extensions of these quantum algebras by extending the automorphisms and derivations of the underlying iterated skew polynomial rings. Our main result shows that these power series extensions are indeed well-defined iterated skew power series rings over a field k. Consequently, these algebras are complete Hausdorff topological rings with respect to a suitable I-adic topology. These power series extensions are completions with respect to the augmentation ideal, and they are noetherian local domains. (Received January 02, 2007)