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**Edward S. Letzter\***, letzter@temple.edu. *Q-Commutative Power Series Rings at Roots of Unity*. Preliminary report.

Given a field  $k$  and multiplicatively antisymmetric parameters  $q_{ij} \in k^\times$ , we can construct the noncommutative formal power series ring  $R := k_q[[x_1, \dots, x_n]]$ , where  $x_i x_j = q_{ij} x_j x_i$ . It then follows from well-known theory that  $R$  is a local, regular, noetherian, zariskian domain having Krull and global dimension equal to  $n$ . In recent joint work with Linhong Wang, we studied the two-sided ideal theory of  $R$ , obtaining our most precise results in the case when the  $q_{ij}$ , for  $i < j$ , are algebraically independent. In the present talk I will discuss the “extreme opposite scenario” – the case when the  $q_{ij}$  are all roots of unity. The focus will be on two-sided ideal theory and, in particular, catenarity of the prime spectrum. (Received September 11, 2009)