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Charles D Frohman* (charles-frohman@uiowa.edu), Department of Mathematics, The University of Iowa, Iowa City, IA 52242, and **Sanjay L Kumar**, Department of Mathematics, The University of Iowa, Iowa City, IA 52242. *Tangle Functors for Quantum Groups at Roots of Unity*. Preliminary report.

The quantum group $U_q(sl_2)$ when q is a root of unity has center a finite extension of the coordinate ring of the algebraic group that is Poisson dual to $SL_2\mathbb{C}$. Contrary to popular belief, the $U_2(sl_2)$ is not quasitriangular, instead of an R -matrix there is an R -automorphism of $U_q(sl_2) \otimes U_q(sl_2)$ that takes comultiplication to its opposite. We work out explicit formulas based on this automorphism for a tangle functor. The tangle functor behaves differently than traditional tangle functors as the representations assigned to strands, change at the crossings. This work starts with investigations of Reshetikhin and Kashaev. (Received December 30, 2014)