Meeting: 1001, Evanston, Illinois, SS 24A, Special Session on Hopf Algebras at the Crossroads of Algebra, Category Theory, and Topology

1001-16-384 **David E. Radford*** (radford@uic.edu), Department of Mathematics, Statistics, and, Computer Science (m/c 249), 851 South Morgan Street, Chicago, IL 60607-7045. *On the Tensor Product of an Oriented Quantum Algebra with Itself.* Preliminary report.

Let A be a finite-dimensional oriented quantum algebra over a field k. There an oriented quantum algebra structure on $A \otimes A$ which is motivated by an algebra isomorphism of the quantum double $D(A)$ with $A \otimes A$ when A has a factorizable Hopf algebra structure. We describe and study this oriented quantum algebra structure on $A \otimes A$ and work it out in detail when $A = \mathrm{M}_2(k)$ is the algebra of 2×2 matrices over k and has the oriented quantum algebra structure which gives rise to the Jones polynomial. The double in of interest in connection with the Hennings Invariant of 3-manifolds. (Received August 31, 2004)