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**David E. Radford\*** ([radford@uic.edu](mailto:radford@uic.edu)), Department of Mathematics, Statistics, and Computer Science (m/c 249), 851 South Morgan St., Chicago, IL 60607-7045. *Oriented Quantum Algebras Derived from Yetter–Drinfel’d Modules*. Preliminary report.

Let  $H$  be a Hopf algebra with bijective antipode over a field  $k$ . Finite-dimensional Yetter–Drinfel’d modules  $M$  over  $H$  afford the algebra  $\text{End}(M)$  of linear endomorphisms of  $M$  a natural oriented quantum algebra structure. When  $H$  is finite-dimensional there is a simple relationship between this oriented quantum algebra structure on  $\text{End}(M)$  and the canonical oriented quantum algebra structure on the Drinfel’d double  $D(H)$  of  $H$ .

Oriented quantum algebras give rise to regular isotopy invariants of oriented knots and links. We can account for the Jones polynomial, in particular, starting with the prototype of the Taft (Hopf) algebra. (Received January 25, 2005)