1163-16-996 **Georgia Benkart*** (`benkart@math.wisc.edu`), Department of Mathematics, University of Wisconsin-Madison, Madison, WI 53706. *Tensor Representations for the Drinfeld Double of the Taft Algebra.*

The Drinfeld double D_n of the Taft algebra A_n is a quasi-triangular Hopf algebra, which Kauffman and Radford have shown has a unique ribbon element v when n is odd and $n \geq 3$. We determine an explicit expression for v and use that and the R-matrix of D_n to construct an action of the Temperley-Lieb algebra $TL_k(\xi)$ as D_n-module endomorphisms on the k-fold tensor power $V^{\otimes k}$ of any two-dimensional simple D_n-module V. The parameter $\xi = -(q^{\frac{1}{2}} + q^{-\frac{1}{2}})$, where q is the nth root of unity used to define D_n.

When V is the unique self-dual two-dimensional simple module, there is a diagrammatic algorithm for computing the $TL_k(\xi)$-action. We show that this action is faithful for any $k \geq 1$ and that $TL_k(\xi)$ is isomorphic to the centralizer algebra $End_{D_n}(V^{\otimes k})$ for $1 \leq k \leq 2n - 2$.

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