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Louis H. Kauffman* (kauffman@uic.edu), Math UIC 851 South Morgan Street, 851 South Morgan Street, Chicago, IL 60607-7045. *Unitary Representations of the Braid Group*.

This talk (joint work with Sam Lomonaco) will discuss the construction of unitary representations of the braid group via Temperley-Lieb Recoupling Theory. Such representations occur at roots of unity for the bracket variable A , and include the well-known "Fibonacci Model" of Kitaev and Freedman (used in formulations of topological quantum computation). This approach to the construction of unitary braid representations can be regarded in the context of topological quantum field theory, and it is an elementary approach based on the bracket state sum model for the Jones polynomial. (Received February 20, 2006)