1046-57-839   **Louis H. Kauffman***, Math UIC, 851 South Morgan Street, Chicago, IL 60607-7045. *Oriented State Sums for the Jones Polynomial.*

For classical knots and links the Jones polynomial is only mildly sensitive to orientation. This is reflected in the fact that the bracket state sum model for the Jones polynomial is defined on unoriented diagrams. (The orientation dependence derives from the writhe normalization of the bracket state sum.) However, if one makes an oriented analog of the bracket state sum, one finds that there are a number of ways to keep orientation information locally in the state summation and to, in principle, add infinitely many new variables. Curiously, for classical knots in the three-sphere all this information disappears due to the Jordan Curve Theorem. This is not the case for knots in thickened surfaces and for virtual knots, and there are very strong and non-trivial oriented state sum generalizations of the Jones polynomial in these domains. This talk will discuss such generalizations. (Received September 12, 2008)