

1017-57-158

Uwe Kaiser* (kaiser@math.boisestate.edu), Department of Mathematics, Boise State University, Boise, ID 83725-1555, and **Nikolaos Apostolakis**. *On Kauffman bracket quantization*. Preliminary report.

We derive a formula expanding the coefficients of the Kauffman bracket quantization of a closed oriented surface of negative Euler characteristic into an algebra of diagram resolutions, which are reminiscent of iterated string topology operations. It is proved from this that the bilinear pairings of the \star -product are bi-differential operators on the ring of character functions, and the quantization is natural and invariant under the mapping class group. Moreover the quantization has a hermitian property induced from the crossing change operation in cylinders over surfaces. We speculate on geometric structures on the character variety (as a complex-algebraic variety, respectively complex-symplectic manifold on the smooth quasi-variety of irreducible characters), which induces the Kauffman bracket quantization (up to some natural equivalence). It is conjectured that a flat algebraic connection on the smooth part of the character variety defines a Fedosov quantization which induces the Kauffman bracket quantization. (Received February 20, 2006)