1158-57-61 **Charles Frohman*** (charles-frohman@uiowa.edu) and **Joanna Kania-Bartoszynska**.

Representation Theory of the Kauffman Bracket skein algebra of a surface at a root of unity.

Let F be a closed surface of negative Euler characteristic, and ζ be a complex root of unity whose order is not divisible by 4. The Kauffman bracket skein algebra of F at ζ, $K_\zeta(F)$ is an algebra built out of framed links in $F \times [0,1]$ modulo the Kauffman bracket skein relation. The center $Z_\zeta(F)$ of $K_\zeta(F)$ is the coordinate ring of the $SL_2\mathbb{C}$ character variety of $\pi_1(F)$.

A representation $\rho : \pi_1(F) \to SL_2\mathbb{C}$ is **nonelementary** if it is irreducible, has infinite image and there is a loop on the surface α so that $|tr(\rho(\alpha))| > 2$. The skein algebra can be reduced at such a representation to yield a matrix algebra.

We show that if the nonelementary representation ρ extends over the fundamental group of a handlebody H whose boundary is F, then the skein module of the handlebody reduced at the extension of ρ is an irreducible representation of the skein algebra. (Received February 19, 2020)