

Meeting: 1003, Atlanta, Georgia, SS 15A, AMS Special Session on Quantum Topology, I

1003-57-690 **Patrick M. Gilmer*** (gilmer@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70808, and **Gregor Masbaum.** *Integral lattices in TQFT.* Preliminary report.

We find explicit bases for naturally defined lattices over a ring of algebraic integers in the $SO(3)$ -TQFT-modules of surfaces at roots of unity of odd prime order. The corresponding mapping class group representations preserve a hermitian form on these lattices. If $p > 3$, the genus is greater than two this form is not unimodular. We discuss an application to the Frohman Kania-Bartoszyńska ideal. This gives an obstruction to embedding certain homology circles in \mathbb{R}^3 . (Received September 27, 2004)