Meeting: 1002, Pittsburgh, Pennsylvania, SS 1A, Special Session on Invariants of Knots and 3-Manifolds

1002-57-176 **Patrick M Gilmer***, gilmer@math.lsu.edu, 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 $p > 3$, and the genus of the surface is greater than two, this form is not unimodular. We discuss an application to the Frohman Kania-Bartoszyńska ideal of a 3-manifold. (Received September 13, 2004)