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*On representations of mapping class groups via the LMO invariant*

The LMO invariant is a universal finite type invariant of three manifolds and it is extended to a topological quantum field theory (TQFT). Therefore, it induces a representation of the mapping class group (MCG) of a surface. The LMO invariant is a graded invariant, and we have representations of MCG for each degree.

In this talk, I explain how to construct the representation of MCG from LMO invariant. By using this method, we actually constructed the representation of MCG of a genus three surface which corresponds to the degree one part of the LMO invariant. I also talk about some observations about this representation.

This is a joint work with Katsunobu Naruoka.