

Reserch plan

KAWAMI Masahiro

First of all, I have to fulfill my work on the spin-preserving symplectic group (the group constructed by automorphisms over the first homology group which are induced by spin-preserving homeomorphisms) group where the genus is two. After that, I would like to extend in the higher genus case. What I have reserched is the isomorphisms over the first homology group which preserves the Rochlin quadratic forms on the first homology group. But in general, we can think other various spin structures on the surface, and the group constructed by automorphisms over the first homology group (isomorphic to some subgroup of symplectic group) which preserve each spin structure. But I conjecture that these subgroups form a conjugate subgroup of the symplectic group. And my reserch is deeply related to the assumption that the embedding is trivial, but I don't know how it is essential. Or if I admit the non-trivial embedding, new reserch should start to clear this point.

On the other hand, there is an important invariants called topological symmetry group. When we embed the complete graph with six vertices in the 3-sphere trivially, the topological symmetry group of this graph and the pin-preserving symplectic group share the groups with the same order. If we succeed in getting the relevant isomorphisms between them, we should expect some interesting relatons between them by comparing with each other.