FINITE GROUP ACTIONS AND LAGRANGIAN FLOER THEORY

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This is joint work with Cheol-hyun Cho.

We construct a finite group action on the Lagrangian Floer theory when a symplectic manifold has a finite group action. For this, we first develop G-Novikov Morse theory. Then, we introduce a notion of a *spin profile* of a Lagrangian submanifold and define group actions on Floer cochain complexes for pairs of Lagrangian submanifolds with the same spin profiles. If time permits, we will also explain the case of Fukaya-Seidel category when the Lefschetz fibration is invariant under the group action on the total space of the fibration.

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