FLOER HOMOLOGY OF LAGRANGIAN SUBMANIFOLD

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• OUTLINE

Floer homology of Lagrangian submanifold is regarded as a quatum deformation of the usual homology of Lagrangian submanifold and is a relative analogue of the theory of quantum cohomology of symmplectic manifold.

In this lecture I would like to explain

1) Basic idea of its definition,
2) when it is well defined,
3) its relation to usual homology (spectral sequence)
4) its relation to the homology of loop space.

I would like to mention its application to symplectic topology and to Mirror symmetry. The later include

5) in which sense we can justify the counting of holomorphic disks bounding Lagrangian submanifolds,
6) formulation of homological mirror symmetry,
7) deformation theory,
8) relation to asymptotic analysis,
9) relation to rigid analytic geometry.

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