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A Floer–Gysin long exact sequence for Lagrangian submanifolds

In this talk we will present a Floer-homological version of the classical Gysin sequence for Lagrangian circle bundles. The Floer homology analogue of this sequence looks apparently similar: the singular chomology groups are replaced by Floer cohomologies and the Euler class by an appropriate quantum version of it which we call the Floer–Euler class. However, for many Lagrangians the algebraic properties of this exact sequence are quite different than the classical one.

We will present several applications of this technique to computations of Floer cohomologies, to the study of the topology of Lagrangian submanifolds and to questions concerning rational curves on Fano varieties.

Joint work with Michael Khanevsky.