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P-ADIC ANALYTIC ACTIONS ON FUKAYA CATEGORIES AND ITERATES OF SYMPLECTOMORPHISMS

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Abstract

A theorem of Bell, Satriano and Sierra state that for a given smooth complex surface X with an automorphism ϕ the set of natural numbers n such that $Ext^i(F, (\phi^*)^n(F')) \neq 0$ is a union of finitely many arithmetic progressions and finitely many other numbers. Due to homological mirror symmetry conjecture, one can expect a symplectic version of this statement. In this talk, we will present such a theorem for a class of symplectic manifolds and symplectomorphisms isotopic to identity. The technique is analogous to its algebro-geometric counterpart: namely we construct p-adic analytic action on a version of the Fukaya category, interpolating the action of the iterates of the symplectomorphism.

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