

Capacities as a complete symplectic invariant

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Symplectic geometry originated from classical mechanics, where the canonical symplectic form on phase space appears in Hamilton's equation. It is related to dynamical systems and algebraic geometry, among other fields.

Roughly speaking, a (symplectic) capacity is a real-valued function on the class of all symplectic manifolds, satisfying some natural conditions. The set of all capacities can be viewed as the dual of the class of all symplectic manifolds. Helmut Hofer et al. asked the following question:

For a given symplectic category, do the capacities form a complete invariant?

The main result presented in this talk provides a positive answer to this question for some large symplectic category. It appears to be the first result concerning this question, except for results for manifolds of dimension 2, ellipsoids, and polydiscs in \mathbf{R}^4 .

This talk is about a joint work with Yann Guggisberg.