

Bowen's entropy-conjugacy conjecture is true up to finite index

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Abstract

For a topological dynamical system (X, f) , consisting of a continuous map $f : X \rightarrow X$, and a (not necessarily compact) set $Z \subset X$, Bowen defined a dimension-like version of entropy, $h_X(f, Z)$. In the same work, he introduced a notion of entropy-conjugacy for pairs of invertible compact systems: the systems (X, f) and (Y, g) are called entropy-conjugate if there exist invariant Borel sets $X' \subset X$ and $Y' \subset Y$ such that $h_X(f, X \setminus X') < h_X(f, X)$, $h_Y(g, Y \setminus Y') < h_Y(g, Y)$, and $(X', f|_{X'})$ is topologically conjugate to $(Y', g|_{Y'})$. Bowen conjectured that two mixing shifts of finite type are entropy-conjugate if they have the same entropy. In joint work with Mike Boyle and Jérôme Buzzi, we prove that two mixing shifts of finite type with equal entropy and left ideal class are entropy-conjugate. Consequently, in every entropy class Bowen's conjecture is true up to finite index.