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Section:

9. Ordinary Differential Equations and Dynamical Systems

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Periodic data, intersection types and conjugacy of profinite surface automorphisms.

The intersection type represents a natural topological invariant of automorphisms encoding the cellular structure of the complement of the invariant manifolds in the ambient space. We focus on the class of *weakly hyperbolic profinite automorphisms* on surfaces. They may be thought as generalized Morse-Smale's obtained by allowing many-pronged saddles at the periodic points and arbitrary translations on (abelian) profinite groups as dynamics on the nonwandering set. It is known that by Nielsen-Thurston this class exhausts the zero-entropy sector. Our results include the characterization of admissible periodic data from the evaluation of the homology zeta function and some results about topological and smooth conjugacy from the analysis of intersection types.