

Topological Horseshoes for surface homeomorphisms

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We will present a new criteria, based on a previously developed forcing theory for Brouwer equivariant theory, to identify the existence of topological horseshoes in surface homeomorphisms. Some applications for the description of zero entropy diffeomorphisms of surfaces with null genus will be given. In particular, we show that, if Λ is a transitive invariant subset of a homeomorphism of the 2-sphere that has null topological entropy, then:

- 1) Either Λ is a periodic orbit
- 2) Or Λ is an irrationally rotating set
- 3) Or the dynamics is topologically infinitely renormalizable over Λ , and the dynamics is semi-conjugated to an odometer.

Joint work with P. Le Calvez