

New Trends in Onedimensional Dynamics

Celebrating the 70th anniversary of Welington de Melo

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Title: Orbit forcing theory for surface homeomorphisms and applications

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Abstract: Using the notion of maximal isotopies and transverse foliations, it is possible, for a given homeomorphism f of a surface that is isotopic to the identity, to associate to every point a "transverse trajectory", $I(z)$ that is a path from z to $f(z)$ in the space of leaves of this foliation. A forcing theory exists in this set of paths (and their concatenation) similar to what exists in one-dimensional dynamics. In particular one will state a simple criteria of existence of a topological horsehoe. This efficient tool permit us in join work with Fabio Tal (USP) to prove some results of existence of topolgical horsehoe as results about rotation sets for surface homeomorphisms.