

New Trends in Onedimensional Dynamics

Celebrating the 70th anniversary of Welington de Melo

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Title: Renormalization and Symmetry

Authors: Marco Martens

Abstract: Each unimodal renormalization fixed point is hyperbolic and the stable manifold has codimension 1. The strategy behind this is to observe consecutive renormalizations. To do so one should forget the composition part of renormalization. Then renormalization becomes a microscope which reveals the internal structure of the map. This microscope reveals a symmetry in this internal structure. A symmetry given by the dyadic rationals (in the case of period doubling). The corresponding representation turns out to have one dimensional symmetric part. The unstable direction. Renormalization is a microscope. It reveals the connections between the parts, symmetry. One just needs to observe for these connections to manifest themselves.