ICM 1998, Berlin, Aug. 18–27

Abstracts of Plenary and Invited Lectures

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 58F03, 58F23
de Melo, Welington, IMPA, Brazil
Renormalization and Rigidity in one dimensional smooth dynamical systems

If two smooth unimodal maps or real analytic critical circle maps have the same bounded combinatorial type then there exists a $C^{1+\alpha}$ diffeomorphism conjugating the two maps along the corresponding critical orbits for some $\alpha > 0$. The proof is based on the detailed understanding of the orbit structure of an infinite dimensional dynamical system, the renormalization operator.
Reference: 1. E. de Faria and W. de Melo, Rigidity of Critical Circle Mappings, I, II, Institute for Mathematical Sciences, Suny StonyBrook, Preprint 1997/16, 1997/17. 2. W. de Melo and S. Van Strien, One-Dimensional Dynamics, Springer-Verlag, 1993. 3. M Lyubich, Feigenbaum-Coullet-Tresser Universality and Milnor's Hairiness Conjecture, to appear in Annals Of Math.