

A classification of Hénon maps in the presence of strange attractors

Jan Boroński

Jagiellonian University, Poland

jan.boronski@uj.edu.pl

Sonja Štimac

University of Zagreb, Croatia

sonja@math.hr

In my talk I shall present my work with Sonja Štimac from [1]-[2] on Hénon maps with strange attractors (Wang-Young parameters [6]-[7]). First I shall explain a construction, inspired by a work of Crovisier and Pujals on mildly dissipative diffeomorphisms of the plane [3]-[5], of conjugacy of these maps to the shift homeomorphisms on inverse limits of dendrites with dense set of branch points, and a characterization of orbits of critical points in terms of these inverse limits. Then I will explain how this leads to a classification of conjugacy classes of such maps in terms of a single sequence of 0s and 1s.

References

- [1] BOROŃSKI J., ŠTIMAC S; *Densely branching trees as models for Hénon-like and Lozi-like attractors*, **Advances in Mathematics** 429 (2023) 109191
- [2] BOROŃSKI J., ŠTIMAC S; *The pruning front conjecture, folding patterns and classification of Hénon maps in the presence of strange attractors*, arXiv:2302.12568v2
- [3] CROVISIER S., PUJALS S., *Strongly dissipative surface diffeomorphisms*, **Commentarii Mathematici Helvetici** 93 (2018), 377–400.
- [4] CROVISIER S., PUJALS S., *From zero to positive entropy* **Notices of the American Mathematical Society** 69 (2022), 748–761.
- [5] CROVISIER S., PUJALS S., TRESSER CH. *Mild dissipative diffeomorphisms of the disk with zero entropy*, **Acta Mathematica** to appear; arXiv:2005.14278 [math.DS]

- [6] WANG Q., YOUNG L.-S., *Strange attractors with one direction of instability*, **Communications in Mathematical Physics** 218 no. 1 (2001), 1-97.
- [7] WANG Q., YOUNG L.-S. *Toward a theory of rank one attractors*, **Annals of Mathematics** 167 (2008), 349-480.