

On the structure of Lozi maps kneading curves

DIOGO BAPTISTA¹, RICARDO SEVERINO²

¹ *School of Technology and Management, Polytechnic Institute of Leiria, Leiria, Portugal
CIMA, University of Évora, Évora, Portugal.*

E-mail address: diogo.baptista@ipleiria.pt

² *CIMA, University of Évora, Évora, Portugal.*

E-mail address: ricardo@math.uminho.pt

It is well known that the family of Lozi maps plays a key role in our understanding of plane dynamics. Being a two-parameter piecewise linear plane family of maps, therefore a very simple framework to study and understand dynamics on the plane, they are also close to the one-parameter family of tent maps of the interval. Thus, in principle, it seems that we have the chance to study why certain results known for one-dimension dynamics are not true when the dimension of the phase space is larger than one. With this work, we study the relationship between kneading sequences of tent maps, the topological symbolic invariants introduced by Milnor and Thurston, [2], for modal maps of the interval, with Lozi maps kneading sequences, introduced by Yutaka Ishii [3]. Building on the notion of kneading curves on the parameter space, introduced in [1], we characterize the structure of these curves for finite, periodic and aperiodic unimodal kneading sequences. Our results show that there is some strong connection between Lozi dynamics and the dynamics of tent maps.

References

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