

Renormalization in Lorenz maps - completely invariant sets and periodic orbits

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Lorenz maps are one-dimensional maps with a single discontinuity, which appear in a natural way as Poincaré maps in geometric models of well known Lorenz attractor. In this talk we will discuss connections between periodic points, completely invariant sets and renormalizations of expanding Lorenz maps. We will introduce a few examples showing that in general renormalization cannot be fully characterized by a completely invariant set. This indicates that there are certain gaps in the literature (cf. [1], [2]).

The results are part of the joint work with Piotr Oprocha [3].

References

- [1] H. Cui, Y. Ding: *Renormalization and conjugacy of piecewise linear Lorenz maps*, Adv. Math. **271** (2015) 235–272.
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- [4] P. Oprocha, P. Potorski, P. Raith: *Mixing properties in expanding Lorenz maps*, Adv. Math. **343** (2019) 712–755.