

On dynamics of Lorenz maps

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Abstract: In this talk we will present several dynamical properties of *expanding Lorenz maps*, that is maps f acting on $[0,1]$ satisfying the following three conditions:

- there is a critical point $0 < c < 1$ such that f is continuous and strictly increasing on $[0, c)$ and $(c, 1]$;
- left and right limits of $f(x)$ at c are 1 and 0, respectively;
- f is differentiable for all points not belonging to a finite set F and $f'(x) > 1 + a$ for some $a > 0$ and all x from $[0, 1] \setminus F$;

with special emphasis on piecewise linear case. Among other, we will consider such properties as periodic orbits, transitivity, mixing, renormalizations and proper invariant sets.

Keywords: Lorenz map, Lorenz model, renormalization, mixing, periodic orbit

Acknowledgment: P. Oprocha was supported by National Science Centre, Poland (NCN), grant no. 2019/35/B/ST1/02239.

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