

On the barycenter set of some one-dimensional maps

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Abstract:

The standard tent map and baker map are often introduced as first examples of chaotic maps in standard textbooks on dynamical systems. By Birkhoff's ergodic theorem it is obvious that the average position or barycenter of generic orbits for these maps is 0.5. Periodic orbits are exceptional orbits in the sense that most of them have barycenters different from 0.5. In this talk we discuss some interesting properties about their barycenter set, provide some patterns of periodic orbits with the same barycenter, and discuss some related open questions.