

Research on 3-periodic Points for the Generalized Tent Maps

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In this paper, we investigate the generalized tent maps, whose vertex, left endpoint and right endpoint are (a, b) , $(0, s)$ and $(1, c)$ respectively, where $0 < a < 1$, $0 < b \leq 1$, $0 \leq c < 1$ and $0 \leq s < 1$. According to the Li-York theorem, the core of my research is that under the following different situations, we give the conditions for the existence of 3-periodic points and the number of 3-periodic points for the generalized tent maps, and which three of the 3-periodic points for f are determined to form a periodic orbit. From the easy cases to difficult cases, we firstly consider the three cases that the left endpoint and the right endpoint of the maps are $(0, 0)$ and $(1, c)$ separately, the vertex is $(1/2, 1)$, $(a, 1)$ or $(1/2, b)$ separately. Lastly, we investigate the cases that the vertex, left endpoint and right endpoint are (a, b) , $(0, s)$ and $(1, c)$ separately, where $0 < a < 1$, $0 < b \leq 1$, $0 \leq c < 1$ and $0 \leq s < 1$.