A fundamental question in dynamics is whether two systems $f$ and $g$ are smoothly conjugate on their attractors, i.e., does there exist a $C^1$ map $h$ defined on the attractors of the systems, such that $f \circ h = h \circ g$. The existence of a smooth conjugacy says that the geometry of the attractors is rigid; it cannot be modified in small scales. For such a reason this phenomenon is known as “rigidity”. In the present paper, the authors study the rigidity phenomenon for circle maps with a break point, i.e., with a discontinuity point in the derivative. They prove the existence of a full Lebesgue measure set $S$ of irrational numbers such that any two maps with the same size of the break and with the same rotation number belonging to $S$ are $C^1$ conjugate. Contrary to the case of circle maps with a critical point, for circle maps with a break point the rigidity phenomenon does not occur for all rotation numbers [see K. M. Khanin and S. Kocić, Ann. Inst. H. Poincaré Anal. Non Linéaire 30 (2013), no. 3, 385–399; MR3061428].

References


Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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