Feigenbaum Numbers for Certain Flat-Top Families

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Abstract

We report on numerical results for certain families of S-unimodal maps with flat critical point. For four one-parameter families, differing in their amount of flatness, we study the Feigenbaum limits α and δ. There seems to be a finite δ and a finite α associated with each period doubling cascade in each family. Some rough numerical estimates are obtained, and our upper bound on δ is smaller than the corresponding supremum for families with nonflat critical point. One would expect that these numbers should only depend on the nature (flatness) of the maximum, and thus be constant in each family. Our data support this hypothesis for α, but are inconclusive when it comes to δ.