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Laredo, TX 78041. *Strange Attractors and Some Dynamical Properties of a Unimodal Map.*

It is clear that sensitivity to initial conditions is a special case of expansive sensitivity. In 1993, MacEachern and Berliner considered the converse of the previous statement and showed that the answer is negative applied on a discrete dynamical system generated by the Tent map, which is a piecewise unimodal linear map on the interval $[0, 1]$. The purpose of this presentation is to generalize their analysis to continuous unimodal maps on the unit interval $[0, 1]$, in particular on the Logistic map $f_r(x) = rx(1 - x)$ when $r = 4$. In this direction we will first have a brief review of strange attractors and provide a classification according to the dynamical system which generates them and their geometrical properties. Then, we will classify the points of the unit interval of the Logistic map when $r = 4$ according to their shadows and will prove that the set of all shadows of a point is negligible and the set of all points having shadows has Lebesgue measure one. (Received September 18, 2017)