

## RESEARCH ANNOUNCEMENTS

### ON THE ABUNDANCE OF APERIODIC BEHAVIOUR FOR MAPS ON THE UNIT INTERVAL<sup>1</sup>

BY P. COLLET AND J.-P. ECKMANN

Continuous maps from the interval  $[0, 1]$  to itself have been studied for some time as simple models of dynamical systems with discrete time. In particular, the map  $x \mapsto 1 - 2|x - \frac{1}{2}|$  has no stable periodic orbit on  $[0, 1]$ . In the paper [1] we show that such behaviour is very common among the members of a parametrized family of maps which contain a quadratic critical point.

Let  $0 < \delta < \frac{1}{2}$  and define the map  $f_\delta: [0, 1] \rightarrow [0, 1]$  by

$$f_\delta(x) = \begin{cases} 1 - \delta - (x - \frac{1}{2})^2/\delta & \text{for } x \in [\frac{1}{2} - \delta, \frac{1}{2} + \delta], \\ 1 - 2|x - \frac{1}{2}| & \text{for } x \in [0, \frac{1}{2} - \delta] \cup [\frac{1}{2} + \delta, 1]. \end{cases}$$

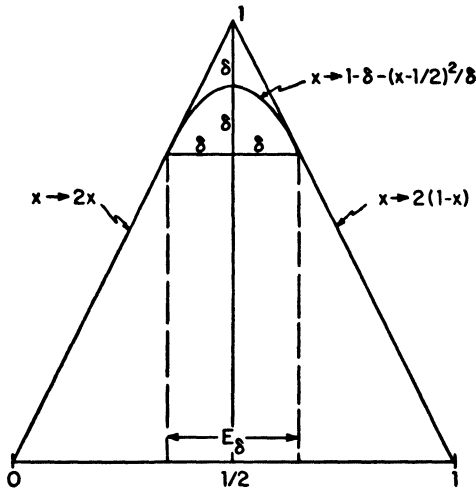


FIGURE 1. The function  $f_\delta$  for  $\delta = 0.15$ .

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