
PAWEL GORA, Concordia University
Periodic Islands for 2-dim Maps

We consider a two dimensional map

$$G(x, y) = (y, f(\alpha y + (1 - \alpha)x)),$$

where $f(t) = 1 - 2|t - 1/2|$ is the tent map or $f(t) = 4t(1 - t)$ is the logistic map, and $0 \leq \alpha \leq 1$ is a parameter.

For specific values of α the connected support of the absolutely continuous invariant measure (its existence is an unproven conjecture) disintegrates into a number of separate "islands" which still seem to support the acim. The map moves the islands periodically giving an example of a "weak chaos", a seemingly periodic motion which actually is chaotic.

We present a number of examples of periodic islands for different values of α . No theoretical results are presented, we only show computer generated images.