Logistic map, period doubling

\[ J = 5 \, \frac{p \, dq}{2 \, \pi} \]

\[ \frac{\partial S}{\partial \phi} = \frac{S_k(\phi, \vec{a}) - S_k(\phi, \vec{b})}{\nu(\phi)} \]

\[ S_1(\vec{a}, \vec{b}) = \frac{S_k(\vec{a}, \vec{b})}{\epsilon (\vec{a}, \vec{b})} \]

Poincaré-Birkhoff theorem

Homoclinic tangle

stable manifold, unstable manifold

heteroclinic, homoclinic

KAM theorem

Hessian condition

diophantine condition