

TOWARDS SCENARIOS OF CHAOS APPEARANCE IN THREE-DIMENSIONAL MAPS

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We analyze chaotic dynamics of three-dimensional smooth dissipative maps (diffeomorphisms). We show that two main bifurcation scenarios of chaos developing (from an asymptotically stable fixed (periodic) point to a strange attractor) can be typically occurred here. In the first scenario, the spiral (Shilnikov) attractor appears, whereas, in the second one, either Lorenz-like or a "figure-8" strange attractors can be observed. We give a qualitative description of both these scenarios and illustrate them by some numerics (for 3D Henon maps).