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DETECTING PERIODIC ORBITS IN SOME 3D CHAOTIC QUADRATIC POLYNOMIAL DIFFERENTIAL SYSTEMS

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ABSTRACT. Using the averaging theory we study the periodic solutions and their linear stability of the 3-dimensional chaotic quadratic polynomial differential systems without equilibria studied in [3]. All these differential systems depend only on one-parameter.

1. Introduction. After the computation of the equilibrium points of a differential system, the more interesting orbits are the periodic ones, and the study of their stability provides information of the dynamics in their neighborhood, mainly when the system under study models a real problem coming from biology, physics, engineering, etc. But in general the study of the periodic solutions of a differential system is not an easy task because while the study of the dynamics around an equilibrium point is a local problem, the study of the dynamics around a periodic orbit is a global problem.

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