ZERO-HOPF BIFURCATION OF PERIODIC ORBITS IN THE GENERALIZED RÖSSLER SYSTEM

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Abstract. We apply a technique of Llibre based on the averaging method to a Rössler-type system and we prove the existence of a periodic orbit. The system studied is a three-dimensional quadratic system and has the form

$$\begin{cases} \dot{x} = -y - z + kx, \\ \dot{y} = x + ay, \\ \dot{z} = bx - cz + xz, \end{cases}$$

where a, b, c and k are real arbitrary parameters.

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