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On the Bifurcations of a Hanmiltionian Having Three Homoclinic Loops Under Z_3 Invariant Quintic Perturbations

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摘要
关键词   homoclinic loop bifurcation   heteroclinic loop bifurcation   Hopf bifurcation   stability   limit cycles

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Abstract A cubic system having three homoclinic loops perturbed by Z_3 invariant quintic polynomials is considered. By applying the qualitative method of differential equations and the numeric computing method, the Hopf bifurcation, homoclinic loop bifurcation and heteroclinic loop bifurcation of the above perturbed system are studied. It is found that the above system has at least 12 limit cycles and the distributions of limit cycles are also given.

Key words   homoclinic loop bifurcation   heteroclinic loop bifurcation   Hopf bifurcation   stability   limit cycles

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