

Crossing Limit Cycles Bifurcating from Period Annuli in Discontinuous Planar Piecewise Linear Hamiltonian Differential Systems with Three Zones

CLAUDIO PESSOA

*Universidade Estadual Paulista (UNESP), Instituto de Biociências Letras e Ciências Exatas,
R. Cristovão Colombo, 2265, 15.054-000, S. J. Rio Preto, SP, Brasil
c.pessoa@unesp.br*

Keywords: Limit cycle; piecewise Hamiltonian differential system; Melnikov function; period annulus.

The main subject studied in this work is the number of crossing limit cycles bifurcating simultaneously from three period annuli in discontinuous planar piecewise linear Hamiltonian differential systems with three zones. More precisely, we use the expressions of the Melnikov functions associated with the differential system to estimate the number of crossing limit cycles that bifurcate simultaneously from period annuli under suitable linear perturbations. We present a concrete example of a piecewise linear near-Hamiltonian differential system in which the lower bound of the number of limit cycles that bifurcate from the period annuli is reached.

Bibliography

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