Conference

Multiparameter Melnikov maps for continuing periodic orbits

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Abstract

We consider the Melnikov map approach to the continuation of periodic orbits of a nonlinear system close to a manifold N of such orbits (perhaps arising through symmetry). With $\dim N = n$ and with k parameters this leads to the study of generic behaviour of an n-dimensional family of $n \times k$ matrices. We illustrate some of the interesting geometry in the context of a single or a coupled pair of forced van der Pol oscillators.

Keywords: Melnikov, periodic orbit, continuation, van der Pol.