

## 三维系统中一族闭轨在周期扰动下的分支

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**摘要** 讨论一类三维系统在周期扰动下的分支问题. 假设此三维系统有一族闭轨, 利用 Poincaré 映射及积分流形定理, 得到了在周期扰动下由这族闭轨产生次调和解和不变环面的条件, 并讨论了次调和解的鞍结点分支.

**关键词** [分支](#), [次调和解](#), [不变环面](#).

**分类号** [34C23](#), [34C45](#)

## Bifurcation of a Three-Dimensional System with Periodic Perturbation

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**Abstract** In this paper, bifurcation of subharmonic solutions and invariant tori of a three-dimensional system under periodic perturbation is studied. Assume that the unperturbed three dimensional system has a family of closed orbits, by using Poincaré map and integral manifold theory, sufficient conditions for the existence of subharmonic solutions and invariant tori of the perturbed system are obtained. Moreover, saddle-node bifurcation of subharmonic solutions are studied.

**Key words** [Bifurcation](#), [subharmonic solutions](#), [invariant tori](#).

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