Gentile, Guido

A proof of existence of whiskered tori with quasi flat homoclinic intersections in a class of almost integrable Hamiltonian systems. (English) Zbl 0841.58038

Forum Math. 7, No. 6, 709-753 (1995).

In this paper a "rotator-pendulum model" is considered, i.e. a family of rotators interacting with a pendulum via a conservative force. The model is described by an ℓ degrees of freedom perturbed Hamiltonian $H_0 + \mu f$. For $\mu = 0$ the model admits $(\ell - 1)$ dimensional invariant tori which possess homoclinic stable and unstable manifolds called "whiskers". Here a new direct proof is given for the existence of the tori and their whiskers in the perturbed ($\mu \neq 0$) case.

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MSC:

37C75 Stability theory for smooth dynamical systems
34D10 Perturbations of ordinary differential equations

Keywords:

whiskered tori; quasi flat homoclinic intersections; almost integrable Hamiltonian systems; existence

Full Text: DOI EuDML