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On a conjecture for the critical behaviour of KAM tori. (English) Zbl 0935.37021
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Summary: At the light of recent results in literature we review a conjecture formulated in [*G. Gallavotti, G. Gentile and V. Mastropietro*, Math. Phys. Electron. J. 1, paper No. 5, 13 pp. (1995; [Zbl 0849.58038](#))], about the mechanism of breakdown of invariant sets in KAM problems and the identification of the dominant terms in the perturbative expansion of the conjugating function. We show that some arguments developed therein can be carried out further only in some particular directions, so limiting a possible future research program, and that the mechanism of break down of invariant tori has to be more complicated than as conjectured in the quoted paper.

MSC:

- [37J40](#) Perturbations of finite-dimensional Hamiltonian systems, normal forms, small divisors, KAM theory, Arnol'd diffusion
- [37N05](#) Dynamical systems in classical and celestial mechanics

Keywords:

[invariant sets in KAM problems](#); [conjugating function](#); [invariant tori](#)

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