SEMI-GLOBAL NON INTEGRABILITY OF HAMILTONIAN SYSTEM AND BOREL SUMMABILITY

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Abstract. We give a Hamiltonian system which is nonintegrable in a domain containing two singular points and that is integrable in some neighborhood of a singular point. The system is an arbitrarily small nontrivial perturbation of an integrable Hamiltonian system given by confluence of regular singular points of a generalized hypergeometric system. Under the nonresonance condition and a certain condition expressed by the Borel transform of the coefficients of the equation we show that the Hamiltonian system is non integrable in the domain containing two irregular singular points as well as locally integrable around an irregular singular point.

References

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