Perturbation theory of a symmetric center within Liénard equations

Jean-Pierre Françoise

(in collaboration with X. Dongmei (Shanghai Jiao Tong University))

Laboratoire J.-L. Lions, Université Pierre et Marie Curie - Paris 6, Paris, France

We introduce the complex analysis of Lambert function to develop further the global perturbation theory of an integrable Liénard equation which displays a symmetric center. We prove a global Morse lemma for the first integral and deduce the existence of an associated Picard-Fuchs system.