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Thomas Holst och Joakim Sundberg: Number of limit cycles of a certain Liénard equation

Sammanfattning

In what follows we recall the basic notions of the theory of limit cycles of plane analytic vector fields and illustrate them in the case of the Liénard equation. The main purpose of this treatise is to (re)prove the fundamental result of G.S. Rychkov from 1975 that the Liénard equation with an even degree 4 polynomial coefficient at the first derivative has at most 2 limit cycles. We complement this result with our numerical study of the dependence of the number of limit cycles of this special equation on two natural parameters.