Reversibility and branching of periodic orbits

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We study the dynamics near an equilibrium point of a 2-parameter family of a reversible system in $\mathbb{R}^6$. In particular, we exhibit conditions for the existence of periodic orbits near the equilibrium of systems having the form $x^{(vi)} + \lambda_1 x^{(iv)} + \lambda_2 x'' + x = f(x, x', x'', x''', x^{(iv)}, x^{(v)})$. The techniques used are Belitskii normal form combined with Lyapunov-Schmidt reduction.

References

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