Bifurcation of periodic solutions of asymptotically linear autonomous Hamiltonian system

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We study the existence and bifurcation from infinity of 2π-periodic solutions of the asymptotically linear autonomous Hamiltonian system

$$\dot{u} = JH'(u).$$

Under additional assumptions, using the angle conditions introduced by Bartsch and Li in [1], we consider also the case with resonance at infinity. To prove the results we use the degree for S^1-invariant strongly indefinite functionals defined in [2].

References

[1] *T. Bartsch, S. Li*: Critical point theory for asymptotically quadratic functionals and applications to problems with resonance. Nonlinear Anal. TMA *28* (1997), 419–441.

[2] *A. Gołębiewska, S. Rybicki*: Global bifurcations of critical orbits of G-invariant strongly indefinite functionals. Nonlinear Anal. *74* (2011), 1823–1834.