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INVARIANT TORI FOR PERIODICALLY PERTURBED OSCILLATORS

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Abstract

The response of an oscillator to a small amplitude periodic excitation is discussed. In particular, sufficient conditions are formulated for the perturbed oscillator to have an invariant torus in the phase cylinder. When such an invariant torus exists, some perturbed solutions are in the basin of attraction of this torus and are thus entrained to the dynamical behavior of the perturbed system on the torus. In particular, the perturbed solutions in the basin of attraction of the invariant torus are entrained to a subharmonic or to a quasi periodic motion.

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