

## SLOWLY VARYING OSCILLATORS\*

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We develop a Melnikov type perturbation method for detecting periodic and homoclinic orbits and codimension one bifurcations in a class of third order nonlinear ordinary differential equations. These equations may be autonomous or contain time periodic terms, but we assume that they are small perturbations of integrable Hamiltonian systems with unperturbed energy functions of the form  $H(x,y;z)$  and that the  $z$ -coordinate varies slowly in the perturbed system. We apply these methods to a nonlinear oscillator subject to weak feedback control.

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### References

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