The Pennsylvania State University The Graduate School College of Engineering

THESIS TITLE

A Dissertation in Your Department Name by Your Name

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Submitted in Partial Fulfillment of the Requirements $\qquad \qquad \text{for the Degree of}$

Master of Science

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Abstract

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Acknowledgments

Dedication



Chapter 1 Introduction

1.1 Background

Bibliography

- [1] MELNIKOV, V. K. (1963) "On the Stability of the Center for Time-Periodic Perturbations," Transactions of the Moscow Mathematical Society, 12, pp. 1–56.
- [2] DAVIES, M. A. and F. C. MOON (1993) "3-D Spatial Chaos in the Elastica and the Spinning Top: Kirchhoff Analogy," *Chaos*, **3**(1), pp. 93–99.
- [3] TONKIN, S. W. (1980) "A Basic Attitude Instability of Spacecraft with Imperfect Momentum Wheels," *Automatica*, **16**, pp. 415–418.
- [4] MATSUMOTO, T. (1984) "A Chaotic Attractor from Chua's Circuit," *IEEE Transactions on Circuits and Systems*, **CAS-31**(12), pp. 1055–1058.
- [5] MACKAY, R. S. (1988) "A Criterion for Non-Existence of Invariant Tori for Hamiltonian Systems," in *Conference on Nonlinear Dynamics* (G. Turchetti, ed.), World Scientific, Bologna, Italy, pp. 44–56.
- [6] FREUND, L. B. and W. D. NIX (1996) "A Critical Thickness Condition for a Strained Compliant Substrate/Epitaxial Film System," Applied Physics Letters, 69(2), pp. 173–175.
- [7] MARSDEN, J. and P. J. HOLMES (1979) "A Horseshoe in the Dynamics of a Forced Beam," in *International Conference on Nonlinear Dynamics* (R. H. G. Helleman, ed.), vol. 357, Annals of the New York Academy of Sciences, New York, pp. 313–321.
- [8] Koiller, J. (1984) "A Mechanical System with a "Wild" Horseshoe," *Journal of Mathematics and Physics*, **25**(5), pp. 1599–1604.
- [9] TSIOTRAS, P. and J. M. LONGUSKI (1995) "A New Parameterization of the Attitude Kinematics," *The Journal of the Astronautical Sciences*, **43**(3), pp. 243–262.
- [10] SHIMADA, I. and T. NAGASHIMA (1979) "A Numerical Approach to Ergodic Problem of Dissipative Dynamical Systems," *Progress of Theoretical Physics*, **61**(6), pp. 1605–1616.
- [11] SMITH, P. and N. M. DAVENPORT (1988) "A Perturbation Method for Saddle Connections and Homoclinic Bifurcation in Duffing's Equation," *Dynamics and Stability of Systems*, **2**(4), pp. 167–182.
- [12] KETEMA, Y. (1992) "A Physical Interpretation of Melnikov's Method," *International Journal of Bifurcation and Chaos*, **2**(1), pp. 1–9.
- [13] Graesser, E. J. and F. A. Cozzarelli (1994) "A Proposed Three-Dimensional Constitutive Model for Shape Memory Alloys," *Journal of Intelligent Material Systems and Structures*, **5**, pp. 78–89.
- [14] RICHARDSON, D. L. and J. W. MITCHELL (1999) "A Simplified Variation of Parameters Approach to Euler's Equations," *Journal of Applied Mechanics*, **66**, pp. 273–276.

- [15] MITCHELL, J. W. and D. L. RICHARDSON (1999) "A Simplified Variation of Parameters Solution for the Motion of an Arbitrarily-Torqued Asymmetric Rigid Body," in AAS/AIAA Astrodynamics Specialist Conference, Girdwood, Alaska.
- [16] PARKS, P. C. (1967) "A Stability Criterion for a Panel Flutter Prolem via the Second Method of Liapunov," in *Differential Equations and Dynamical Systems* (J. K. Hale and J. P. Lasalle, eds.), University of Puerto Rico, pp. 287–298.
- [17] HSU, C. S. and T. H. LEE (1971) "A Stability Study of Continuous Systems under Parametric Excitation via Liapunov's Direct Method," in *IUTAM Symposium*, *Instability of Continuous Systems* (H. Leipholz, ed.), Springer-Verlag, Herrenalb, Germany, pp. 112–118.
- [18] Bhattacharya, K. and R. D. James (1999) "A Theory of Thin Films of Martensitic Materials with Applications to Microactuators," *Journal of the Mechanics and Physics of Solids*, 47, pp. 531–576.
- [19] RIMROTT, F. P. J. and F. JANABI-SHARIFI (1992) "A Torque-Free Flexible Model Gyro," Journal of Applied Mechanics, 59, pp. 7–15.
- [20] MÜLLER-PFEIFFER, S., H. VAN KRANENBURG, and J. C. LODDER (1992) "A Two-Dimensional Monte Carlo Model for Thin Growth by Oblique Evaporation: Simulation of Two-Component Systems for the Example of Co-Cr," *Thin Solid Films*, **213**, pp. 143–153.
- [21] HASHIN, Z. and S. SHTRIKMAN (1963) "A Variational Approach to the Theory of the Elastic Bahaviour of Multiphase Materials," *Journal of the Mechanics and Physics of Solids*, 11, pp. 127–140.
- [22] JUNKINS, J. L. (1997) "Adventures on the Interface of Dynamics and Control," in *Aerospace Sciences Meeting*, vol. 20, Reno, Nevada, pp. 1058–1071.