REFERENCES ON DYNAMICAL SYSTEMS

By

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REFERENCES ON DYNAMICAL SYSTEMS

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The references cited below contain over 1100 papers and monographs of interest to researchers in dynamical systems. Special emphasis has been placed on papers related to the dynamics of differential equations and their discrete analogues. References prior to 1960 are noted in boldface. Even though this list is incomplete, it is made available with the hope that it will be useful for obtaining an introduction to the literature on dynamical systems.

The compilation of these references began during the 1989-1990 IMA year on Dynamical Systems and Their Applications, and a version was incorporated into the AHPCRC Preprint Series in 1991. The references are corrected and expanded from time to time. Comments and suggestions are welcome. At a later time, up-to-date versions of these references will be made available through the IMA on the World Wide Web: http://www.ima.umn.edu

LIST OF TOPICS


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2Also see Reaction Diffusion Equations


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3 Also see Chaotic Behavior
4 Also see Inertial Manifolds: Infinite Dimensional Theory


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5 Also see KAM Theory
6 Also see Chaotic Behavior and Damped Conservative Systems


**Low Dimensional Theories.** Alexander (1994), and Milnor (1990).


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7 Also see Nonautonomous Dynamics
8 Also see Hamiltonian Dynamics
9 Included here are papers on the Kuramoto-Sivashinsky equation, the Cahn-Hilliard equation, and the heat convection equations. Also see Reaction Diffusion Equations.
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10 Also see Quasi Periodicity, Almost Periodicity


Reversible Systems. V I Arnold and Sevryuk (1986), Bibikov (1971, 1979), Bibikov and
REFERENCES ON DYNAMICAL SYSTEMS


References


A Ait Ou Ammi and M Marion (1992), Nonlinear Galerkin methods and mixed finite elements: Two-grid algorithms for the Navier-Stokes equations, Ecole Centrale de Lyon Preprint 143.


L Amerio (1955), Soluzioni quasi periodiche, o limitate, di sistemi differenziale nonlineari quasi periodiche, o limitati, Ann Mat Pura Appl 39, 97-119.

U an der Heiden, A Longtin, M C Mackey, J G Milton, and R Scholl (1990), Oscillatory modes in a nonlinear second order differential equation with delay, J Dynamics and Differential Equations 2, 423-449.


A A Andronov (1929), Application of Poincaré's theorem on "bifurcation points" and "change in stability" to simple autooscillatory systems, C R Acad Sci Paris 189, 559-561.

A A Andronov and E A Leontovič-Andronova (1939), Some cases of the dependence of periodic motions on a parameter, Učenye Zapiski Gorki Univ 6, 3-??.
REFERENCES ON DYNAMICAL SYSTEMS


D V Anosov (1967), Geodesic flows on closed Riemannian manifolds with negative curvature, Proc Steklov Inst Math 90, 1-209.


R F Arenstorf (1968), New periodic solutions of the plane three-body problem corresponding to elliptic motion in the lunar theory, J Differential Equations 4, 202-256.


R Aris (1989), Notes toward the definition of the mathematical principles of chemical reactor analysis, Preprint.


L Arnold (1993), Generation of random dynamical systems, Univ Bremen Preprint 280.


L Arnold and X Kedai (1993), Invariant measures for random dynamical systems and a necessary condition for stochastic bifurcation from a fixed point, Univ Bremen Preprint 283.


A V Babin and S N Chow (1993), *Long-time behavior as \( \lambda \to 0 \) of solutions of parabolic equations depending on \( \lambda t \)*, Preprint.


REFERENCES ON DYNAMICAL SYSTEMS


A S Besicovitch (1932), Almost Periodic Functions, Cambridge Univ Press.

N P Bhatia (1970), Attraction and non-saddle sets in dynamical systems, J Differential Equations 8, 229-249.


Yu N Bibikov and G Fusco (1993), Branching of families of invariant tori for systems with zero linear part, Ann Mat Pura Appl 163, 133-141.


G D Birkhoff (1932), Nouvelles recherches sur les systems dynamiques, Mem Pont Acad Soc Novi Lyncae 1, 85-216.


S Bleher, C Grebogi, and E Ott (1990), Bifurcation to chaotic scattering, Physica D 40, 87-121.


S Bochner (1975), *General almost automorphy*, Proc Natl Acad Sci USA 72, 3815-3838.


P Boxler (1990b), *How to construct stochastic center manifolds on the level of vector fields*, Univ Bremen, Report 238.


REFERENCES ON DYNAMICAL SYSTEMS


H W Broer and G Vegter (1989), Bifurcational aspects of parametric resonance, Preprint, Univ Groningen.


P Brunovský (1974), Generic properties of the rotation number of one-parameter diffeomorphisms of the circle, Czech Math J 24, 74-90.

P Brunovský (1990), The attractor of the scalar reaction diffusion equation is a smooth graph, J Dynamics and Differential Equations 2, 293-323.


P Brunovský and B Fiedler (1986b), Zero numbers on invariant manifolds in scalar reaction diffusion equations, Nonlinear Analysis, TMA 10, 179-194.


L A Bunimovich and Ya G Sinai (1988), Spacetime chaos in coupled map lattices, Nonlinearity 1, 491-516.


L B Bushard (1972), Behavior of the periodic surface for a periodically perturbed autonomous systems and periodic solutions, J Differential Equations 12, 487-503.


R Camassa and D D Holm (1992), Dispersive barotropic equations for stratified mesoscale ocean dynamics, LANL Preprint.


G Carpenter (1977), A geometric approach to singular perturbation problems with applications to nerve impulse equations, J Differential Equations 23, 335-367.


J Carr and R L Pego (1988), Metastable patterns in solutions of \( u_t = \varepsilon^2 u_{xx} - f(u) \), Preprint.


M L Cartwright and J E Littlewood (1945), *On non-linear differential equations of second order: I The equation $\ddot{y} - k(1 - y^2)\dot{y} + y = b\lambda \cos(\alpha t + \omega)$, k large*, J London Math Soc 20, 180-189.


N Chafee (1968), *The bifurcation of one or more closed orbits from an equilibrium point of an autonomous differential system*, J Differential Equations 4, 661-679.


V Chernyshev (1985), *Structure of the neighborhood of the heteroclinic cycle with a saddle rest point*, Differential'nye Uravnenija 21, 1531-1536.


S-N Chow, B Deng, and B Fiedler (1990), *Homoclinic bifurcation at resonant eigenvalues*, J Dynamics and Differential Equations 2, 177-244.


REFERENCES ON DYNAMICAL SYSTEMS


A Debiusse (1989), *Inertial manifolds and Sacker's equation*, Univ de Paris-Sud Preprint 89-23.


G F Dell’Antonio and B Onofrio (1986), *Construction of a center-unstable manifold for C¹-flows and an application to the Navier-Stokes equations*, Arch Rational Mech Anal 93, 185-201.


R L Devaney (1986), *An Introduction to Chaotic Dynamical Systems*, Benjamin Commings, Menlo Park, Cal.


C Devulder, M Marion, and E Titi (1993), *On the rate of convergence of the nonlinear Galerkin methods*, Math Comp 60, 495-514.


A Eden, C Foias, and B Nicolaenko (1994), *Exponential attractors of optimal Lyapunov dimension for the Navier-Stokes equations*, J Dynamics and Differential Equations 6, 301-323.

REFERENCES ON DYNAMICAL SYSTEMS

A Eden, C Foias, and R Temam (1991), Local and global Lyapunov exponents, J Dynamics and Differential Equations, 133-177.


M S Elbialy (1988a), Collision singularities of the n-body problem and the problem of infinite spin, Preprint.


A S Elkhader (1992), A result on a feedback system of ordinary differential equations, J Dynamics and Differential Equations 4, 399-418.


J Favard (1933), Lecons sur les fonctions presque periodiques, Gauthier Villars, Paris.


M J Feigenbaum (1979), Qualitative universality for a class of nonlinear transformations??, J Statistical Phys 21, 669-706.


M Feinberg (1989), The existence and uniqueness of steady states for a class of chemical reaction networks, Preprint.


N Fenichel (1977), Asymptotic stability with rate conditions, II, Indiana Univ Math J 26, 81-93.


G Floquet (1883), *Sur les équations différentielles linéaires à coefficients périodiques*, Ann Sci École Norm Sup 12, 47-82.


C Foias and J C Saut (1984a), *Asymptotic behavior as t → ∞ of solutions of Navier-Stokes equations and nonlinear manifolds*, Indiana Univ Math J 33, 459-477.

C Foias and J C Saut (1984b), *On the smoothness of the nonlinear spectral manifolds associated to the Navier-Stokes equations*, Indiana Univ Math J 33, 911-926.


REFERENCES ON DYNAMICAL SYSTEMS

C Foias, G R Sell and E S Titi (1989), *Exponential tracking and approximation of inertial manifolds for dissipative equations*, J Dynamics and Differential Equations 1, 199-244.


C Foias and R Temam (1979), *Some analytic and geometric properties of the solutions of the Navier Stokes equations*, J Math Pures Appl 58, 339-368.


C Foias and E S Titi (1991), *Determining nodes, finite difference schemes and inertial manifolds*, Nonlinearity 4, 135-153.


J Fröhlich, T Spencer, and C E Wayne (19**), *An invariant torus for nearly integrable Hamiltonian systems with infinitely many degrees of freedom*.


J M Ghidaglia (1988b), *An estimate of the actual number of degrees of freedom for damped driven KdV equations.*


J. K. Hale (1976), *Generic bifurcation with applications*.


REFERENCES ON DYNAMICAL SYSTEMS


T C Harris (1968), *Periodic solutions of arbitrarily long periods in Hamiltonian systems*, J Differential Equations 4, 131-141.


M R Herman (1981), *Construction d'un diffeomorphisme minimal d'entropie topologique non nule*, Ergodic Theory Dynamical Systems 1, 65-76.


M W Hirsch (1988), *Systems of differential equations that are competitive or cooperative III: Competing species*, Nonlinearity 1, 51-71.

M W Hirsch (1989), *Systems of differential equations that are competitive or cooperative IV: Convergence in 3-dimensional systems*, J Differential Equations 80, 94-106.


K Hockett and P J Holmes (1986), *Josephson's junction, annulus maps, horseshoes and rotation sets*, Ergodic Theory Dynamical Systems 6, 205-239.

K Hockett and P J Holmes (1988a), *Bifurcation to badly ordered orbits in one-parameter families of circle maps, or angels fallen from the devil's staircase*, Proc Amer Math Soc 102, 1031-1051.


Ju S Il'yashenko (1992), *Global analysis of the phase portrait for the Kuramoto-Sivashinsky equation*, J Dynamics and Differential Equations 4, 585-615.


R A Johnson (1980a), On a Floquet theory for almost periodic two-dimensional linear systems, J Differential Equations 37, 184-205.


R A Johnson (1986), Exponential dichotomy, rotation number and linear differential operators with bounded coefficients, J Differential Equations 61, 54-78.


M S Jolly, I Kevrekidis, and E S Titi (1991), *Preserving dissipation in approximate inertial forms for the Kuramoto-Sivashinsky equation*, J Dynamics and Differential Equations 3, 179-197.


D A Jones and E S Titi (1991), *A remark on the quasi stationary approximate inertial manifolds for the Navier-Stokes equations*, Preprint.

D A Jones and E S Titi (1993), *Upper bounds on the number of determining modes, nodes, and volume elements for the Navier-Stokes equations*, Indiana Univ Math J 42, 875-887.


J L Kaplan and J A Yorke (1977), *On the nonlinear differential delay equation x'(t) = -f(x(t), x(t - 1))* , J Differential Equations 23, 293-314.


S Khalsa (1987), *Application of topological techniques to the analysis of asymptotic behavior of numerical solutions for a reaction diffusion equation*, SIAM J Math Anal 18, **..**.


REFERENCES ON DYNAMICAL SYSTEMS


N Kopell and L N Howard (1975), Bifurcations and trajectories connecting critical points, Advances Math 18, 306-358.


S Kotani (1982), Lyapunov indicies determine absolutely continuous spectra of stationary random one dimensional Schrödinger operators, Proc Kyoto Stochastic Conference.

G Kovačić (1993), Singular perturbation theory for homoclinic orbits in a class of near-integrable Hamiltonian systems, J Dynamics and Differential Equations 5, 559-597.


N Krylov and N Bogoliubov (1937), La théorie générale de la mesure et son application a l'étude des systèmes dynamiques de la mécanique non linéaire, Ann Math 38, 65-113.


I Kupka (1963), Contribution à la théorie des champs génériques I, Contributions Differential Equations 2, 457-484.


Y Kuramoto (1978), Diffusion induced chaos in reaction systems, Progr Theoretical Phys Supp 64, 346-367.


J Kurzweil (1972), Solutions of linear nonautonomous functional differential equations which are exponentially bounded for $t \to -\infty$, J Differential Equations 11, 376-384.


W T Kyner (1964), Qualitative properties of orbits about an oblate planet, Comm Pure Appl Math 17, 227-236.

I Kukavica (1991), On the time analyticity radius of the solutions of the two dimensional Navier-Stokes equations, J Dynamics and Differential Equations 3, 611-618.


R Lauterbach (1989), *Problems with spherical symmetries: Studies on bifurcations and dynamics for O(3) equivariant equations*, Univ Augsburg Preprint No 204.


REFERENCES ON DYNAMICAL SYSTEMS


M Luskin and G R Sell (1989), *Parabolic regularization and inertial manifolds*.


REFERENCES ON DYNAMICAL SYSTEMS


H Matano (1982), *Nonincrease of lap-number of a solution for a one-dimensional semilinear parabolic equation*, J Fac Sci Univ Tokyo 23, 401-441.


R McGehee (1973b), *The stable manifold theorem via an isolating block*.


I Melbourne, P Chossat, M Golubitsky (1988), *Heteroclinic cycles involving periodic solutions in mode interactions with O(2) symmetry*, Univ Houston Preprint No UH MD-47.


REFERENCES ON DYNAMICAL SYSTEMS


J Milnor (1990), *Dynamics in One Complex Variable*, Lecture Notes, SUNY Stony Brook.


X Mora (1983), Finite dimensional attracting manifolds in reaction diffusion equations, Contemporary Math 17, 353-360.
Y Morita (1985), Stability changes of periodic solutions to a coupled nonlinear equation, Publ RIMS, Kyoto Univ 21, 47-74.
Y Morita and S Jimbo (1992), ODEs on inertial manifolds for reaction diffusion systems in a singularly perturbed domain with several thin channels, J Dynamics and Differential Equations 4 (to appear).
Y Morita, H Ninomiya, and E Yanagida (1992), Nonlinear perturbation of boundary values for reaction diffusion systems: Inertial manifolds and their applications, Ryukoku Univ Preprint.
M Morse (1921a), A one-to-one representation of geodesics on a surface of negative curvature, Amer J Math 43, 33-51.
M Morse (1921b), Recurrent geodesics on a surface of negative curvature, Trans Amer Math Soc 22, 84-100.
J K Moser (1956), The analytic invariants of an area preserving mapping near a hyperbolic point, Comm Pure Appl Math 19, 673-692.
J A Murdock (1988), Qualitative theory of nonlinear resonance by averaging and dynamical systems methods, Dynamics Reported 1, 91-172.
T Nambu (1991), Stabilization of parabolic systems via a degenerate nonnegative feedback, J Dynamics and Differential Equations 3, 399-422.
V V Nemytskii and V V Stepanov (1960), Qualitative Theory of Differential Equations, Princeton Univ, Princeton, N J.


S E Newhouse (1979), The abundance of wild hyperbolic sets and non-smooth stable sets for diffeomorphisms, Publ Math IHES 50, 101-151.


S Newhouse and J Palis (1976), Cycles and bifurcation theory, Asterisque 31, 43-140.


H E Nusse and J A Yorke (1991), Analysis of a procedure for finding numerical trajectories close to chaotic saddle hyperbolic sets, Ergodic Theory and Dynamical Systems 11, 189-208.


M M Peixoto (1962), *Structural stability on two dimensional manifolds*, Topology 1, 101-120.


REFERENCES ON DYNAMICAL SYSTEMS

V A Pliss (1971b), The behavior of the solutions of a sequence of second order periodic systems with a small nonlinearity, Differential'nye Uravnenija 7, 651-660.

V A Pliss (1972a), On a conjecture of Smale, Differential'nye Uravnenija 8, 268-282.

V A Pliss (1972b), The behavior of the solutions of a periodic system of two differential equations that has an integral set of zero measure, Differential'nye Uravnenija 8, 553-555.

V A Pliss (1972c), Analysis of the necessity of the conditions of Smale and Robbin for structural stability for periodic systems of differential equations, Differential'nye Uravnenija 8, 972-983.

V A Pliss (1974), A system of differential equations that has an infinite number of stable periodic solutions, Differential'nye Uravnenija 10, 2179-2183, 2309.


H Poincaré (1890), Sur le problème des trois corps et les équations de la dynamique, Acta Math 13, 1-270.


P Poláček (1989c), Existence of unstable sets for invariant sets in compact semiflows. Applications in order preserving semiflows, Preprint.

P Poláček (1991), Complicated dynamics in scalar semilinear parabolic equations in higher space dimension, J Differential Equations 89, 244-271.

P Poláček (1993), Transversal and nontransversal intersections of stable and unstable manifolds in reaction diffusion equations on symmetric domains, Comenius Univ Preprint M2-93.


L Pontryagin (1946), Topological Groups, Princeton Univ Press, Princeton, N J.


C C Pugh (1992), The C1 connecting lemma, J Dynamics and Differential Equations 4, 545-553.


C G Ragazzo (1994), Chaos and integrability in a nonlinear wave equation, J Dynamics and Differential Equations 6, 227-244.


J Roels (1971a), *An extension to resonant cases of Liapunov’s theorem concerning the periodic solutions near a Hamiltonian equilibrium*, J Differential Equations 9, 300-324.

J Roels (1971b), *Families of periodic solutions near a Hamiltonian equilibrium when the ratio of the two eigenvalues is 3*, J Differential Equations 10, 431-447.


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J C Saut and R Temam (1980), *Generic properties of Navier-Stokes equations: Genericity with respect to the boundary values*, Indiana Univ Math J 29, 427-446.


REFERENCES ON DYNAMICAL SYSTEMS


G R Sell and M Taboada (1992), Local dissipativity and attractors for the Kuramoto-Sivashinsky equation in thin 2D domains, Nonlinear Analysis, TMA 18, 671-687.


G R Sell and Y You (1994a), Dynamical systems and global attractors, AHPCRC Preprint 94-030.


Z Shao and E S Titi (1993), Parameterizing the global attractor of the Navier-Stokes equations by nodal values, Preprint.

R Shaw (1981), Strange attractors, chaotic behavior and information flow, Z Naturforsch A36, 80-112.


Y Sibuya (1957), Sur un système d'équations différentielles ordinaires a coefficients presque périodiques et contenant des parametres, J Univ Tokyo 7, 407-417.


S Smale (1963c), Stable manifolds for differential equations and diffeomorphisms, Ann Sc Norm Sup Pisa 18, 97-116.
S Smale (1966), Structurally stable systems are not dense, Amer J Math 88, 491-496.
H Steinlein and H-O Walther (1990), Hyperbolic sets, transversal trajectories and symbolic dynamics for C1-maps in Banach spaces, J Dynamics and Differential Equations 2, 325-365.
S Stenberg (1957), Local contractions and a theorem of Poincaré, Amer J Math 79, 809-824.
M Taboada (1988b), Extension of an invariant manifold theorem of Mallet-Paret and Sell for a system of evolutionary equations in Hilbert space, Preprint.
M Taboada (1990), Finite dimensional asymptotic behavior for the Swift-Hohenberg model of convection, Nonlinear Analysis, TMA 14, 43-54.
F Takens (1974), Singularities of vector fields, Publ Math IHES 43, 47-100.
R Temam (1977), Navier-Stokes Equations, North-Holland, Amsterdam.
R Temam (1988b), Dynamical systems, turbulence and the numerical solution of the Navier-Stokes equations, Indiana Univ Preprint No 8809.
R Temam (1989a), Attractors for the Navier-Stokes equations: Localization and approximation, J Faculty Sci Tokyo Sec 1A 36, 629-647.
R Temam (1990), Inertial manifolds and multigrid methods, SIAM J Math Anal 21, 154-178.


E S Titi (1990), *On approximate inertial manifolds to the Navier-Stokes equations*, J Math Anal Appl 149, 540-557.


S van Strein (1989), *Smooth linearization of hyperbolic fixed points without resonance conditions*, Tech Univ Delft Preprint 89-03.


R F Williams (1979), *The structure of Lorenz attractors*, Publ Math IHES 50, 101-152.


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