References   *Michael Cross*

General

M. C. Cross and P. C. Hohenberg *"Pattern-Formation Outside of Equilibrium"*, Rev. Mod. Phys. **65**, 851 (1993)

Lecture 1

Amplitude Equations

A. C. Newell and J. A. Whitehead *"Finite Bandwidth, Finite Amplitude Convection"*, J. Fluid Mech. **38**, 279 (1969)

M. C. Cross *"Derivation of the Amplitude Equation at the Rayleigh-Benard Instability"*, Phys. Fluids **23**, 1727 (1980)

M. C. Cross, P. G. Daniels, P. C. Hohenberg, and E. D. Siggia *"Effect of Distant Sidewalls on Wave-Number Selection in Rayleigh-Benard Convection"*, Phys. Rev. Lett. **45**, 898 (1980) and J. Fluid Mech. **127**, 155 (1983)

V. B. Deyirmenjian, Z. A. Daya, and S. W. Morris *"Weakly nonlinear analysis of electroconvection in a suspended fluid film"*, Phys. Rev. **E56**, 1707 (1997)

S. W. Morris, J. R. de Bruyn, and A. D. May *"Electroconvection and Pattern-Formation in a Suspended Smectic Film "*, Phys. Rev. Lett. **65**, 2378 (1990)

S. S. Mao, J. R. de Bruyn, Z. A. Daya, and S. W. Morris *"Boundary-induced Wavelength Selection in a One-dimensional Pattern-forming System "*, Phys. Rev. **E54**, 1048 (1996)

Lecture 2

Swift-Hohenberg Equations

J. B. Swift and P. C. Hohenberg *"Hydrodynamic Fluctuations at Convective Instability"*, Phys. Rev. **A15**, 319 (1977)

H. S. Greenside and W. M. Coughran *"Nonlinear Pattern-Formation Near the Onset of Rayleigh-Benard Convection"*, Phys. Rev. **A30**, 398 (1984)

H. S. Greenside and M. C. Cross *"Stability Analysis of Two-Dimensional Models of 3-Dimensional Convection"*, Phys. Rev. **A31**, 2492 (1985)

K. R. Elder, J. Vinals, and M. Grant *"Ordering Dynamics in the 2-Dimensional Stochastic Swift-Hohenberg Equation"*, Phys. Rev. Lett. **68**, 3204 (1992)

Y. Tu and M. C. Cross *"Chaotic Domain-Structure in Rotating Convection"*, Phys. Rev. Lett. **69**, 2515 (1992)

M. C. Cross, M. Louie, and D. Meiron *"Finite Size Scaling 0f Domain Chaos"*, Phys. Rev. **E63**, 45201 (2001)

Order Parameter Equation and Galerkin Method

W. Pesch "*Complex Spatiotemporal Convection Patterns*", Chaos **6**, 1054 (1996)

E. Bodenschatz, W. Pesch, and G. Ahlers "*Recent Developments in Rayleigh-Benard Convection*", Annual Rev. Fluid Mech. **32,** 709 (2000)

J. L. Rogers, W. Pesch, and M. F. Schatz "*Pattern Formation in Vertically Oscillated Convection*", Nonlinearity **16**, C1 (2003)

Phase Equations

Y. Pomeau and P. Manneville "*Stability and Fluctuations of a Spatially Periodic Convective Flow*", J. Phys. Lett. **40**, L609 (1979)

M. C. Cross and A. C. Newell "*Convection Patterns in Large Aspect Ratio Systems*", Physica **D10**, 299 (1984)

Mean Flow

E. D. Siggia and A. Zippelius "*Pattern Selection in Rayleigh-Bénard Convection Near Threshold*", Phys. Rev. Lett. **47**, 835 (1981)

M. C. Cross "*Phase Dynamics of Convective Rolls*", Phys. Rev. **A27**, 490 (1983)

A. C. Newell, T. Passot, and M. Souli "*The Phase Diffusion and Mean-Drift Equations for Convection at*

Finite Rayleigh Numbers in Large Containers", Phys. Rev. Lett. **64**, 2378 (1990) and J. Fluid Mech. **220**, 187 (1990)

K.-H. Chiam, M. R. Paul, M. C. Cross, and H. S. Greenside "*Mean Flow and Spiral Defect Chaos in Rayleigh-Bénard Convection*", Phys. Rev. **E57**, 056206 (2003)

Defects

G. Tesauro and M. C. Cross "*Climbing of dislocations in non-equilibrium patterns*", Phys. Rev. **A34**, 1363 (1986)

M. C. Cross and Y. Tu "*Defect dynamics for spiral chaos in Rayleigh-Benard convection*", Phys. Rev. Lett. **75**, 834 (1995)

B. B. Plapp, D. A. Egolf, and E. Bodenschatz "*Dynamics and Selection of Giant Spirals in Rayleigh-Benard Convection*", Phys. Rev. Lett. **81** 5334 (1998)

Lattice States

S. Ciliberto, P. Coullet, J. Lega, E. Pampolini, and C. Perez-Garcia "*Defects in Roll-Hexagon Competition*", Phys. Rev. Lett. **65**, 2370 (1990)

Lecture 3

Complex Ginzburg Landau equation

I. S. Aranson and L. Kramer *"The World of the Complex Ginzburg-Landau Equation"*,
   Rev. Mod. Phys. **74**, 99 (2002)

P. S. Hagan *"Spiral Waves in Reaction-Diffusion Equations"*, Siam J. App. Math. **42**, 762 (1982)

Wave instabilities

M. C. Cross *"Traveling and Standing Waves in Binary-Fluid Convection in Finite Geometries"*,
   Phys. Rev. Lett. **57**, 2935 (1986)

C. Martel and J. M. Vega *"Dynamics of a Hyperbolic System that Applies at the Onset*

of the Oscillatory Instability", Nonlinearity **11**, 105 (1998)

E. Knobloch and J. Deluca *"Amplitude Equations for Traveling-Wave Convection"*,
   Nonlinearity **3**, 975 (1990)

A. La Porta and C. M. Surko *"Quantitative Characterization of 2D Traveling-wave Patterns"*,
   Physica **D123**, 21 (1998)

K. L. Babcock, G. Ahlers, and D. S. Cannell *"Noise-Sustained Structure in Taylor-Couette Flow with Through-Flow"*, Phys. Rev. Lett. **67**, 3388 (1991)

J. M. Chomaz, P. Huerre, and L. G. Redekopp *"Bifurcations to Local and Global Modes in Spatially Developing Flows"*, Phys. Rev. Lett. **60**, 25 (1988)

P. Kolodner, C. M. Surko, and H. Willisams *"Dynamics of Traveling Waves near the Onset of Convection in Binary Fluid Mixtures"*, Physica **D37**, 319 (1989)

Lecture 4

Small system chaos

E. Lorenz *"Deterministic Nonperiodic Flow "*, J. Atmos. Sciences, **20**, 130 (1963)

L. D. Landau Akad. Nauk. Dok. **44** 339 (1944) (Also in early editions of *Fluid Mechanics* by Landau and Lifshitz.)

D. Ruelle and F. Takens *"Nature of Turbulence"*, Commun. Math. Phys. **20** 167 (1971)

M. J. Feigenbaum *"Quantitative Universality for a Class of Non-Linear Transformations"*, J. Stat. Phys. **19**, 25 (1978)

G. Ahlers *"Low-Temperature Studies of Rayleigh-Bénard Instability and Turbulence"*,
   Phys. Rev. Lett. **30**, 1185 (1974)

J. P. Gollub and H. L. Swinney *"Onset of Turbulence in a Rotating Fluid"*, Phys. Rev. Lett. **35**, 927 (1975)

A. Libchaber and J. Maurer *"Local Probe in a Rayleigh-Bénard Experiment in Liquid-Helium"*, J. Phys. Lett. Paris **39**, L369 (1978)

G. Ahlers and R. P. Behringer "*Evolution of Turbulence from Rayleigh-Bénard Instability*", Phys. Rev. Lett. **40**, 712 (1978)

A. Libchaber, C. Laroche, and S. Fauve "*Period Doubling Cascade in Mercury, a Quantitative Measurement*", J. Phys. Lett. Paris **43**, L211 (1982)

M. R. Paul, M. C. Cross, P. F. Fischer, and H. S. Greenside "*Power-Law Behavior of Power Spectra in Low Prandtl Number Rayleigh-Benard Convection*", Phys. Rev. Lett. **87** 154501 (2001)

Spatiotemporal chaos

D. A. Egolf, I. V. Melnikov, W. Pesch, and R. E. Ecke "*Mechanisms of extensive spatiotemporal chaos in Rayleigh-Bernard convection*", Nature **404** 736 (2000)

J. Miller and D. A. Huse "*Macroscopic Equilibrium from Microscopic Irreversibility in a Chaotic Coupled-Map Lattice*", Phys. Rev. **E48**, 2528 (1993)

C. H. Bennett and G. Grinstein "*Role of Irreversibility in Stabilizing Complex and Nonergodic Behavior in Locally Interacting Discrete-Systems*", Phys. Rev. Lett. **55**, 657 (1985)

Y. Tu and M. C. Cross "*Chaotic Domain-Structure in Rotating Convection*", Phys. Rev. Lett. **69**, 2515 (1992)

Y. Hu, R. E. Ecke, and G. Ahlers "*Time and Length Scales in Rotating Rayleigh-Bénard Convection*", Phys. Rev. Lett. **74**, 5040 (1995)

M. C. Cross, D. Meiron, and Y. Tu "*Chaotic Domains: a Numerical Investigation*", Chaos **4**, 607 (1994)

S. Tajima and H. S. Greenside "*Microextensive Chaos of a Spatially Extended System*", Phys. Rev. **E66** 017205 (2002)

S. Zaleski "*A Stochastic-Model for the Large-Scale Dynamics of Some Fluctuating Interfaces*", Physica **D34**, 427 (1989)

D. A. Egolf "*Equilibrium Regained: From Nonequilibrium Chaos to Statistical Mechanics*", Science **287**, 5450 (2000)

C. Brito, I. S. Aranson, and H. Chate "*Vortex Glass and Vortex Liquid in Oscillatory Media*", Phys. Rev. Lett. **90**, 068301 (2003)