

CONTENTS

Introduction to the Problems	1
A.S. Wightman	
Applications of Scaling Ideas to Dynamics	
L.P. Kadanoff	
Lecture I. Roads to Chaos:	
Complex Behavior from Simple Systems . .	27
II. From Periodic Motion to Unbounded Chaos:	
Investigations of the Simple Pendulum . .	45
III. The Mechanics of the Renormalization Group	60
IV. Escape Rates and Strange Repellors	63
Introduction to Hyperbolic Sets	73
O.E. Lanford III	
Topics in Conservative Dynamics	103
S. Newhouse	
Classical Mechanics and Renormalization Group	185
G. Gallavotti	
Measures Invariant Under Mappings of the Unit Interval. . .	233
P. Collet and J.-P. Eckmann	
Integrable Dynamical Systems	267
E. Trubowitz	
Appendix (Seminars)	
Iteration of Polynomials of Degree 2,	
Iterations of Polynomial-like Mappings	293
A. Douady	
Boundary of the Stability Domain around the	
Origin for Chirikov's Standard Mapping	295
G. Dôme	

Incommensurate Structures in Solid State Physics and Their Connection with Twist Mappings	296
S. Aubry	
Julia Sets - Orthogonal Polynomials Physical Interpretations and Applications.	300
D. Bessis	
Scaling Laws in Turbulence	303
J.-D. Fournier	
Index	309