

Index

- ABC-flow 192
- Acceleration of particles 85, 138
- Action-angle variables 7
- Alhambra 214
- Ammann's lattice 158, 159, 169, 214
- Aperiodic crystal 145, 225
- Arnold diffusion 29, 87, 90, 235
- Arnold web 101
- Asymmetrical satellite 55

- Basis contour 16
- Beltrami condition 190
- Benard's cells 170, 174
- Bifurcation 118
 - period-doubling 119, 120
- Border
 - of chaos 69, 83, 236
 - of stochastic layer 131
- Breaking up of the web 138

- Cantori 67, 68, 69, 125
- Chaos
 - dynamic (stochasticity) 21, 34
 - global 60, 111
 - minimal 43
 - weak 90
- Chirikov criterion of resonance
 - overlapping 233, 234
- Commutator 14
- Conditionally periodic motion 18
- Conservation of vorticity 173
- Correlator 33

- Decoration 156, 236
 - of the web 156
- Density of states 163, 164, 167

- Diffusion along the web 101
- Discretization 53
- Distribution of singularities 151, 167
- Dumping of correlations 234
- Dynamic organization 167

- Equations
 - of frozen-in vorticity 173
 - of stream lines 175
 - of the trajectories of a liquid's particles 176
- Ergodic motion 33
- Escher Maurits, art 220
- Euler equation 172

- Fermi acceleration 69, 85, 234
- Filtration of structures 157
- First integral 14
- Fixed points 6
 - elliptic 116
 - hyperbolic 117
- Flow with a cellular structure 174
- Fourier analysis 161
- Fourier spectrum of patterns 159, 163, 169, 237
- Fractal domains of diffusion 137
- Fractal pattern 58
- Fractal structure 115
- Fractal tree 137
- Frequency of phase oscillations 24, 27

- Generator of tilings 149
 - with q th symmetry 128
- Green's method 63
- Grid 148

- Hamiltonian formalism 232
- Hamiltonian system 2, 3
 - generalized 4
- Helical flow 206
- Hydromagnetic dynamo 191
- Integral invariants 17
- Integral of motion 14
- Interaction
 - of symmetries 123
 - of two resonances 44
- Intermittency 71, 83, 234
 - Hamiltonian 71, 77, 79
- Invariant curve 60
 - last 61, 83
- Invariant torus 15, 113
- Invariant web-torus 97, 103, 105
- Kagome lattice 132
- KAM theory 28, 60, 87, 232
- KAM-tori 87, 105
- KAM-tori to web-tori transition 107
- Kolmogorov–Arnold theorem 28
- Kolmogorov flow 178
- Kolmogorov–Sinai entropy 34, 35
- Lagrangian turbulence 188, 191
- Liouville–Arnold theorem 14
- Liouville’s theorem 3
- Local instability 30, 234
- Local isomorphism 159, 161, 164, 236
- Lyapunov exponent 32
- Mapping \hat{L} 74, 76, 81
 - of the phase space 19
 - with a twist 111
- Mixing 32, 33
 - time 33
- Mosaic 159
 - aperiodic 159
 - Byzantine 211
 - of the seventh order 156
- Multigrid 148
- Navier–Stokes equation 178
- Ornament 167, 214
- Ornamental technique 211
- Pattern
 - aperiodic 149
 - disordered 168
 - quasi-crystal 148, 159, 167
 - with 11th order symmetry 161
- Pendulum, nonlinear 10
- Penrose tiling 145, 148, 236
- Pentagrid 157
- Percival’s method 67
- Percival’s variational principle 63, 67
- Perturbation
 - of a linear oscillator 90
 - of a nonlinear oscillator 103
- Phase portrait 5, 122
- Phase volume 3
 - coarsened 34
- Phyllotaxis 224
- Poincaré mapping 19
- Point vortex 170
- Poisson’s brackets 3, 5, 14
- Potential of discretization 54
- Projection method 148
- Quasi-symmetry 133, 149, 155, 168, 196, 225
- Random walks 125
- Rayleigh–Benard convection 170
- Resonance 16
 - cyclotron 113
 - Hamiltonian 129
 - nonlinear 21, 232; internal 26
- Resonance tori 88
- Reversible system 232
- Reynold’s number 170
- Rotation number 61, 78
- Self-organization in continuous media 172
- Separatrix 7, 117
 - mapping 39, 101, 131
- Sew together the symmetries 221
- Slowing the diffusion 68
- Snowflake 125
- Soliton 10
 - of a stream line 204
- Spectral properties of the system 9, 18
- Square lattice 117
- Stability
 - of flow 178; with quasi-symmetry 181; with square cells 180
 - of Kolmogorov flow 178
 - of systems 28
- Standard (Chirikov–Taylor) mapping 47, 110
- Stochastic layer 36, 40, 50, 60, 86, 89, 105
- Stochastic sea 58

Cambridge University Press

0521438284 - Weak Chaos and Quasi-Regular Patterns

G. M. Zaslavsky, R. Z. Sagdeev, D. A. Usikov and A. A. Chernikov

Index

[More information](#)*Index*

253

- Stochastic spinning 55
- Stochastic web 86, 89, 124, 129, 133, 151
 - aperiodic 124
 - finite 105, 142
 - fractal 125
 - hydrodynamic 199
 - infinite 113, 117
 - periodic 121
 - uniform 109, 117
 - width 101, 117, 131, 204
 - with crystal symmetry 126
 - with quasi-symmetry 126, 205
- Stream function 173
- Stream lines 175, 189
 - chaotic 188
- Stuart's solution 175
- Symmetry 149
 - fifth order 225, 236
 - rotational 94
- System, nondegenerate 17
- Tiling
 - aperiodic 159
 - of the plane 125, 236
- Torus, destroyed 29
- Transport process 234
- Van Hove singularities 163, 167
- Vortex motion 172
- Vortex street 170
- Wave-particle interaction 235
- Web
 - skeleton 134
 - smoothing 149
 - structure 124
- Width
 - stochastic layer 40, 205
 - stochastic web 101, 117, 131, 204