

# Contents

|    |                                                 |     |
|----|-------------------------------------------------|-----|
| 1  | Introduction . . . . .                          | 1   |
| 2  | The Scattering Transformation . . . . .         | 11  |
| 3  | Regularization . . . . .                        | 23  |
| 4  | Periodic Orbits . . . . .                       | 35  |
| 5  | Existence of an Invariant Cone Field . . . . .  | 41  |
| 6  | Symbolic Dynamics . . . . .                     | 55  |
| 7  | Topological Entropy . . . . .                   | 73  |
| 8  | The Distribution of the Closed Orbits . . . . . | 81  |
| 9  | Fractional Dimension . . . . .                  | 89  |
| 10 | Time Delay . . . . .                            | 95  |
| 11 | Measure of the Bound States . . . . .           | 105 |
| 12 | The Differential Cross Section . . . . .        | 113 |
| 13 | Concluding Remarks . . . . .                    | 129 |
|    | References . . . . .                            | 135 |
|    | Index of Symbols . . . . .                      | 139 |
|    | Index . . . . .                                 | 141 |