

Contents

1 Monotone Maps of the Circle	1
1.1 The Translation Number	1
1.2 The Rotation Number	4
1.3 Dynamics in the Presence of Periodic Points	7
1.4 Dynamics in the Absence of Periodic Points	9
1.5 Invariant Measures	13
2 Rotation Sets.....	17
2.1 Basic Properties	17
2.2 Maximal Rotation Sets.....	23
2.3 Minimal Rotation Sets	27
3 The Deployment Theorem	35
3.1 Preliminaries	35
3.2 Deployment Theorem: The Rational Case	38
3.3 Deployment Theorem: The Irrational Case	52
4 Applications and Computations	57
4.1 Symmetries	57
4.2 Realizing Gap Graphs and Gap Lengths	59
4.3 Dependence on Parameters	62
4.4 The Leading Angle.....	66
4.5 Rotation Sets Under Doubling	68
4.6 Rotation Sets Under Tripling	74
5 Relation to Complex Dynamics.....	85
5.1 Polynomials and Dynamic Rays	85
5.2 Rotation Sets and Indifferent Fixed Points.....	88
5.3 The Quadratic Family	97
5.4 The Cubic Family	101

References.....	119
Index.....	121