

Contents

Preface	vii
Publisher's Note	ix
Chapter I. Measure Theory	1
1. Topology	1
2. Measure	3
3. Measurability	5
4. Connection between λ and ν	9
Chapter II. Generalized limits	11
5. Topology	11
6. Ideals	13
7. Independence	14
8. Commutativity	15
9. Limit functions	18
10. Uniqueness	20
11. Convergence	24
12. Numerical limits	27
Chapter III. Haar measure	33
13. Remarks on measures	33
14. Preliminary considerations about groups	34
15. The existence of Haar measure	37
16. Connection between topology and measure	40
Chapter IV. Uniqueness	47
17. Set theory	47
18. Regularity	50
19. Fubini's theorem	55
20. Uniqueness of Haar measure	60
21. Consequences	66
Chapter V. Measure and topology	71
22. Preliminary remarks	71
23. Hilbert space	73
24. Characterizations of the topology	77
25. Characterizations of the notion of compactness	81
26. The density theorem	83

Chapter VI. Construction of Haar's invariant measure in groups by approximately equidistributed finite point sets and explicit evaluations of approximations	87
1. Notations (combinatorics and set theory)	87
2. Lemma of Hall, Maak and Kakutani	87
3. Notations (topology and group theory)	92
4. Equidistribution	92
5. First example of equidistribution	94
6. Second example of equidistribution	95
7. Equidistribution (concluded)	98
8. Continuous functions	98
9. Means	100
10. Left invariance of means	102
11. Means and measures	103
12. Left invariance of measures	110
13. Means and measures (concluded)	113
14. Convergent systems of a.l.i. means	115
15. Examples of means	117
16. Examples of means (concluded)	119
17. 2-variable means	120
18. Comparison of two O -a.l.i. means	121
19. Comparison of two O -a.l.i. means (concluded)	130
20. The convergence theorem	133