

Contents

0. Basic Notations	9
1. Weak Convergence of Radon Measures	11
1.1. Radon Measures	11
1.2. E -valued Random Variables	12
1.3. The Weak Topology in $\mathfrak{M}(E)$	13
1.4. Prokhorov's Theorem	15
1.5. Convergence of Degenerated Measures	15
1.6. The Dudley-Skorokhod Theorem	16
1.7. Characteristic Function	16
1.8. Characteristic Function of w.r.c. Sets of Measures	18
1.9. The Logarithm of Characteristic Functions	20
2. Convolution and Weak Topology	22
2.1. Convolution of Radon Measures	22
2.2. Convolution and Weak Compactness	23
2.3. Shift Compactness	24
2.4. Factors of Measures	28
2.5. Symmetric Measures and Symmetrization	28
2.6. The Ito-Nisio Theorem	30
3. Banach Spaces and Operators	33
3.1. Examples of Banach Spaces	33
3.2. Dual Spaces and Properties of Banach Spaces	35
3.3. The Maurey-Lindenstrauss-Pełczyński Criterion	36
3.4. Sums of Independent E -valued Random Variables	37
3.5. Type and Cotype of Banach Spaces	39
3.6. The Maurey-Pisier-Krivine Theorem	42
3.7. Maurey's Factorization Theorem	42
3.8. Decomposed Operators	43
3.9. Absolutely Summing Operators	44
4. Cylindrical Measures	47
4.1. Mappings of Radon Measures	47
4.2. Cylindrical Sets and Cylindrical Measures	48

4.3. Characteristic Functions of Cylindrical Measures	49
4.4. Continuity of Cylindrical Measures	51
4.5. Operators and Cylindrical Measures	52
4.6. Radon Extensions of Cylindrical Measures	53
4.7. Mappings of Cylindrical Measures	54
4.8. Stable Cylindrical Measures	56
5. Infinitely Divisible Measures on Banach Spaces	58
5.1. Properties of Infinitely Divisible Measures	58
5.2. Gaussian Measures	61
5.3. Exponents of Measures	63
5.4. Levy Measures	69
5.5. Uniqueness of Levy Measures	75
5.6. Convergence of Generalized Exponents	78
5.7. Levy-Khinchin Representation of i.d. Measures	83
5.8. The Support of Exponents of Measures	86
6. Stable Measures on Banach Spaces	88
6.1. Dilation of Measures	88
6.2. Levy Measures Generating Stable Measures	90
6.3. Levy's Spectral Representation Theorem	97
6.4. Symmetric Stable and Strictly Stable Measures	101
6.5. Stable Measures with Discrete Spectral Measure	104
6.6. Weak Convergence of Stable Measures	106
6.7. Tail Behavior of Stable Measures	111
6.8. One-dimensional Distributions	114
6.9. The Support of Stable Symmetric Measures	118
6.10. Representation of Stable Measures by Their Spectral Measure	119
7. Operators and Stable Symmetric Measures	127
7.1. Stable Random Measures	127
7.2. \mathcal{A}_p -operators	132
7.3. Convergence of \mathcal{A}_p -operators	135
7.4. Decomposition of \mathcal{A}_p -operators	139
7.5. \mathcal{A}_p -operators and Spaces of Stable Type p	143
7.6. q -stable Measures Generated by p -stable Measures	146
7.7. \mathcal{A}_p -operators and Absolutely Summing Operators	149
7.8. \mathcal{A}_p -operators in L_s , $1 \leq s < \infty$	153
8. Estimates Between Stable Symmetric Measures	156
8.1. Weak Domination	156
8.2. Topologies Generated by Stable Measures	160
8.3. The \mathcal{A}_p -ideal Property	163
8.4. Spaces of Cotype (q, p)	165
8.5. Finite Dimensional Characterization of Cotype (q, p)	167
8.6. Sazonov-spaces	175
Bibliography	177
Index of Symbols	189
Index of Subjects	192