

Contents

Preface	v
Introduction	vii
Chapter 1	
MULTI-HILBERTIAN SPACES AND THEIR DUAL SPACES	
1.1 Hilbertian seminorms	1
1.2 Multi-Hilbertian spaces and dual multi-Hilbertian spaces . . .	4
1.3 \mathcal{S} and \mathcal{S}'	6
1.4 The spaces \mathcal{D} and \mathcal{D}' on compact intervals	9
1.5 The spaces \mathcal{D} and \mathcal{D}' on \mathbf{R}^d	10
1.6 The spaces \mathcal{D} and \mathcal{D}' on a manifold	11
Chapter 2	
INFINITE DIMENSIONAL RANDOM VARIABLES AND STOCHASTIC PROCESSES	
2.1 Standard measurable spaces	13
2.2 Fundamental concepts in probability theory	16
2.3 Infinite dimensional random variables	21
2.4 Characteristic functionals	27
2.5 Regular versions in the generalized sense	31
2.6 \mathcal{D}' -valued random variables	32
2.7 \mathcal{D}' -valued stochastic processes	39
2.8 Linear random operators	44
Chapter 3	
INFINITE DIMENSIONAL STOCHASTIC DIFFERENTIAL EQUATIONS	
3.1 General remarks	51
3.2 Ornstein–Uhlenbeck equations of the Malliavin type	55
3.3 Properties of \mathcal{L}_2	61
3.4 Ornstein–Uhlenbeck processes of the Gaveau type	63
3.5 Funaki’s random motion of strings	66
References	69