

1. Record Nr.	UNISA996204900303316
Titolo	Brain structure and function
Pubbl/distr/stampa	Berlin ; ; New York, : Springer-Verlag
ISSN	1863-2661
Disciplina	612.82
Soggetti	Brain - Anatomy Brain - Localization of functions Brain - Physiology Brain - anatomy & histology Brain - physiology Periodicals.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Refereed/Peer-reviewed

2. Record Nr.	UNINA9910137138703321
Autore	Jorgensen Palle
Titolo	Extensions of Positive Definite Functions : Applications and Their Harmonic Analysis // by Palle Jorgensen, Steen Pedersen, Feng Tian
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-39780-X
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XXVI, 231 p. 48 illus., 9 illus. in color.)
Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 2160
Disciplina	515.2433
Soggetti	Harmonic analysis Topological groups Lie groups Fourier analysis Functional analysis Mathematical physics Probabilities Abstract Harmonic Analysis Topological Groups, Lie Groups Fourier Analysis Functional Analysis Mathematical Physics Probability Theory and Stochastic Processes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Foreword -- Preface -- Acknowledgments -- Contents -- List of Figures -- List of Tables -- Symbols -- 1 Introduction -- 1.1 Two Extension Problems -- 1.1.1 Where to Find It -- 1.2 Quantum Physics -- 1.3 Stochastic Processes -- 1.3.1 Early Roots -- 1.3.2 An Application of Lemma 1.1: A Positive Definite Function on an Infinite Dimensional Vector Space -- 1.4 Overview of Applications of RKHSs -- 1.4.1 Connections to Gaussian Processes -- 1.5 Earlier Papers -- 1.6 Organization -- 2 Extensions of Continuous Positive Definite Functions -- 2.1 The RKHS HF -- 2.1.1 An Isometry -- 2.2 The Skew-Hermitian

Operator $D(F)$ in HF -- 2.2.1 The Case of Conjugations -- 2.2.2 Illustration: $G=R$, Correspondence Between the Two Extension Problems -- 2.3 Enlarging the Hilbert Space -- 2.4 $\text{Ext}_1(F)$ and $\text{Ext}_2(F)$ -- 2.4.1 The Case of $n=1$ -- 2.4.2 Comparison of p.d. Kernels -- 2.5 Spectral Theory of $D(F)$ and Its Extensions -- 3 The Case of More General Groups -- 3.1 Locally Compact Abelian Groups -- 3.2 Lie Groups -- 3.2.1 The GNS Construction -- 3.2.2 Local Representations -- 3.2.3 The Convex Operation in $\text{Ext}(F)$ -- 4 Examples -- 4.1 The Case of $G=R^n$ -- 4.2 The Case of $G=R/Z$ -- 4.3 Example: e^{i2x} -- 4.4 Example: $e^{-|x|}$ in $(-a,a)$, Extensions to $T=R/Z$ -- 4.4.1 General Consideration -- 4.5 Example: $e^{-|x|}$ in $(-a,a)$, Extensions to R -- 4.6 Example: A Non-extendable p.d. Function in a Neighborhood of Zero in $G=R^2$ -- 4.6.1 A Locally Defined p.d. Functions F on $G=R^2$ with $\text{Ext}(F) = \cdot$ -- 5 Type I vs. Type II Extensions -- 5.1 Polya Extensions -- 5.2 Main Theorems -- 5.2.1 Some Applications -- 5.3 The Deficiency-Indices of $D(F)$ -- 5.3.1 Polya-Extensions -- 5.4 The Example 5.3, Green's Function, and an HF-ONB -- 6 Spectral Theory for Mercer Operators, and Implications for $\text{Ext}(F)$ -- 6.1 Groups, Boundary Representations, and Renormalization -- 6.2 Shannon Sampling, and Bessel Frames. 6.3 Application: The Case of F_2 and Rank-1 Perturbations -- 6.4 Positive Definite Functions, Green's Functions, and Boundary -- 6.4.1 Connection to the Energy Form Hilbert Spaces -- 7 Green's Functions -- 7.1 The RKHSs for the Two Examples F_2 and F_3 in Table 5.1 -- 7.1.1 Green's Functions -- 7.1.1.1 Summary: Conclusions for the Two Examples -- 7.1.2 The Case of $F_2(x)=1-|x|$, $x(-12,12)$ -- 7.1.2.1 Pinned Brownian Motion -- 7.1.3 The Case of $F_3(x)=e^{-|x|}$, $x(-1,1)$ -- 7.1.4 Integral Kernels and Positive Definite Functions -- 7.1.5 The Ornstein-Uhlenbeck Process Revisited -- 7.1.6 An Overview of the Two Cases: F_2 and F_3 . -- 7.2 Higher Dimensions -- 8 Comparing the Different RKHSs HF and HK -- 8.1 Applications -- 8.2 Radially Symmetric Positive Definite Functions -- 8.3 Connecting F and F When F Is a Positive Definite Function -- 8.4 The Imaginary Part of a Positive Definite Function -- 8.4.1 Connections to, and Applications of, Bochner's Theorem -- 9 Convolution Products -- 10 Models for, and Spectral Representations of, Operator Extensions -- 10.1 Model for Restrictions of Continuous p.d. Functions on R -- 10.2 A Model of ALL Deficiency Index-(1,1) Operators -- 10.2.1 Momentum Operators in $L_2(0,1)$ -- 10.2.2 Restriction Operators -- 10.3 The Case of Indices (d,d) Where $d>1$ -- 10.4 Spectral Representation of Index $(1,1)$ Hermitian Operators -- 11 Overview and Open Questions -- 11.1 From Restriction Operator to Restriction of p.d. Function -- 11.2 The Splitting $\text{HF}=\text{HF}(\text{atom})\text{HF}(\text{ac})\text{HF}(\text{sing})$ -- 11.3 The Case of $G=R^1$ -- 11.4 The Extreme Points of $\text{Ext}(F)$ and $\{F\}$ -- References -- Index.

Sommario/riassunto

This monograph deals with the mathematics of extending given partial data-sets obtained from experiments; Experimentalists frequently gather spectral data when the observed data is limited, e.g., by the precision of instruments; or by other limiting external factors. Here the limited information is a restriction, and the extensions take the form of full positive definite function on some prescribed group. It is therefore both an art and a science to produce solid conclusions from restricted or limited data. While the theory of is important in many areas of pure and applied mathematics, it is difficult for students and for the novice to the field, to find accessible presentations which cover all relevant points of view, as well as stressing common ideas and interconnections. We have aimed at filling this gap, and we have stressed hands-on-examples.
