

<<Traces and determinants of linear operators线性操作的迹和行列式>>

图书基本信息

书名：<<Traces and determinants of linear operators线性操作的迹和行列式>>

13位ISBN编号：9783764361778

10位ISBN编号：3764361778

出版时间：2000-3

作者：Gohberg, Israel

页数：255

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

## <<Traces and determina>>

### 内容概要

This book is dedicated to a theory of traces and determinants on embedded algebras of linear operators , where the trace and determinant are extended from finite rank operators by a limit process.

All the important classical examples of traces and determinants suggested by Hill , von Koch , Fredholm , Poincar é , Ruston and Grothendieck are exhibited in particular , the determinants which were first introduced by Hill and Poincar é in their investigations of infinite systems of linear equations stemming from problems in celestial mechanics are studied most of Fredholm ' s seminal results are presented in this book. Formulas for traces and determinants in a Hilbert space setting are readily derived and generalizations to Banach spaces are investigated.

A large part of this book is also devoted to generalizations of the regularized determinants introduced by Hilbert and Carleman.

Regularized determinants of higher order are presented in embedded algebras.

Much attention is paid to integral operators with semi-separable kernels , and explicit formulas of traces and determinants are given.

One of the conclusions of this book ( based on results of Ben-Artzi and Perelson ) is that the trace and determinant , which are considered here , essentially depend not only on the operator but also on the algebra containing this operator.

In fact , it turns out that by considering the same operator in different algebras , the trace and determinant of non nuclear operators can be almost any complex number.

However , an operator is invertible if and only if each determinant is different from zero.

Also each of the determinants can be used in the inversion formula.

An attractive feature of this book is that it contains the charming classical theory of determinants together with its most recent concrete and abstract developments and applications.

The general presentation of the book is based on the authors ' work.

This monograph should appeal to a wide group of mathematicians and engineers.

The material is self-contained and may be used for advanced courses and seminars.

# <<Traces and determina>>

## 书籍目录

PrefaceIntroduction . Fillite Rank Operators 1 Trace and determinant for finite rank operators 2 Properties of the trace and determinant 3 Representations of the trace and determinant . 4 Uniqueness of the trace and determinant 5 Von Koch form of the determinant . 6 Fredholm form of the determinant . 7 Plemelj-Smithies formulas 8 Polynomial operator pencils . 9 Inversion formulas 10 Comments

Continuous Extension of Trace and Determinant 1 Extension problems and embedded algebras 2 Main theorems 3 Analyticity of the determinant and the Plemelj-Smithies formulas 4 Lipschitz conditions . 5 Several remarks 6 Connections between the zeros of the determinant and the eigenvalues of an operator 7 Determinants of infinite matrices in Von Koch form . 8 Comments . First Examples 1 The Poincaré determinant 2 Hill's method . 3 The Von Koch—Riesz algebra 4 The Mennicken-Wagenfthrer algebra 5 The algebra\* 6 Comments

Trace Class and Hilbert-Schmidt Operators in Hilbert Space 1 Preliminaries . 2 Singular numbers . 3 Inequalities for eigenvalues , diagonal elements and singular numbers 4 Additional inequalities for singular numbers 5 Ideal of trace class operators ' 6 Lidskii trace theorem . 7 Hilbert—Schmidt operators 8 Tests of nuclearity for integral operators with continuous and Hilbert—Schmidt kernels . 9 Integral operators with smooth kernels . 10 Polynomial operator pencils . 11 Classes SP . 12 Comments .

Nuclear Operators in Banach Spaces 1 The Ruston—Grothendieck algebra of nuclear operators 2 Examples of nuclear operators in Banach spaces 3 Grothendieck trace theorem . 4 Asymptotic behavior of eigenvalues of nuclear operators . 5 Comments .

The Fredholm Determinant 1 The Fredholm determinant for integral operators with Continuous and piecewise continuous kernels 2 The Algebra \*Hill's Method(revisited) . 3 Diagonally modified Fredholm determinant 4 A modification of the Plemelj—Smithies formula 5 Integral Operators in  $L_a(T, \mu, u)$  6 Systems of integral equations 7 Comments .

Possible Values of Traces and Determinants . Perelson Algebras 1 Perelson algebras . 2 Possible values of traces and determinantS in Perelson algebras . 3 Possible values in  $D$  . 4 Comments .

Inversion Formulas 1 General inversion formulas 2 Explicit formulas for resolvents of integral operators . 3 Homogeneous integral equations 4 Comments .

Regularized Determinants Hilbert-Carleman Determinants Regularized Determinants of Higher Order Inversion Formulas via Generalised Determinants Determinants of Integral Operators with Semi-separable Kernels Algebras without the Approximation Property Bibliography Index List of Symbols

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>