S E
M S M
E S

EMS Series of Lectures in Mathematics
Edited by Andrew Ranicki (University of Edinburgh, U.K.)

EMS Series of Lectures in Mathematics is a book series aimed at students, professional mathematicians and scientists. It publishes polished notes arising from seminars or lecture series in all fields of pure and applied mathematics, including the reissue of classic texts of continuing interest. The individual volumes are intended to give a rapid and accessible introduction into their particular subject, guiding the audience to topics of current research and the more advanced and specialized literature.

Previously published in this series:
Katrin Wehrheim, *Uhlenbeck Compactness*
Torsten Ekedahl, *One Semester of Elliptic Curves*
Sergey V. Matveev, *Lectures on Algebraic Topology*
Joseph C. Várilly, *An Introduction to Noncommutative Geometry*
Reto Müller, *Differential Harnack Inequalities and the Ricci Flow*
Eustasio del Barrio, Paul Deheuvels and Sara van de Geer, *Lectures on Empirical Processes*
Iskander A. Taimanov, *Lectures on Differential Geometry*
Martin J. Mohlenkamp, María Cristina Pereyra, *Wavelets, Their Friends, and What They Can Do for You*
Stanley E. Payne and Joseph A. Thas, *Finite Generalized Quadrangles*
Masoud Khalkhali, *Basic Noncommutative Geometry*
Helge Holden, Kenneth H. Karlsen, Knut-Andreas Lie, Nils Henrik Risebro, *Splitting Methods for Partial Differential Equations with Rough Solutions*
Koichiro Harada, *"Moonshine" of Finite Groups*

Yurii A. Neretin

Lectures on Gaussian Integral Operators and Classical Groups

European Mathematical Society

Author:

Yurii A. Neretin
Faculty of Mathematics
University of Vienna
Nordbergstrasse 15
1090 Vienna
Austria

and
Institute for Theoretical and
Experimental Physics
Bolshaya Cheremushkinskaya, 25
117218 Moscow
Russia

E-mail: neretin@mccme.ru

and
Faculty of Mechanics and
Mathematics
Moscow State University
119899 Moscow
Russia

2010 Mathematics Subject Classification: 22-02; 22E46, 53C35, 22E50, 47G10, 32M15, 51N30, 14K25, 47B50

Key words: Semisimple Lie groups and their representations, classical groups, symmetric spaces, Fourier transform, p-adic groups, integral operators, Hilbert spaces of holomorphic functions, holomorphic discrete series, reproducing kernels, theta-functions, Cartier model, Weil representation, Segal–Bargmann transform, central extensions, pseudo-Euclidean geometry

ISBN 978-3-03719-080-7

The Swiss National Library lists this publication in The Swiss Book, the Swiss national bibliography, and the detailed bibliographic data are available on the Internet at http://www.helveticat.ch.

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in other ways, and storage in data banks. For any kind of use permission of the copyright owner must be obtained.

© 2011 European Mathematical Society

Contact address:
European Mathematical Society Publishing House
Seminar for Applied Mathematics
ETH-Zentrum FLI C4
CH-8092 Zürich
Switzerland
Phone: +41 (0)44 632 34 36
Email: info@ems-ph.org
Homepage: www.ems-ph.org

Typeset using the author's TEX files: I. Zimmermann, Freiburg
Printing and binding: Druckhaus Thomas Müntzer GmbH, Bad Langensalza, Germany
∞ Printed on acid free paper

9 8 7 6 5 4 3 2 1