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**INTEGRAL OPERATORS IN SPACES OF
SUMMABLE FUNCTIONS**

by *M. A. Krasnosel'skii, P. P. Zabreyko, E. I. Pustyl'nik and P. E. Sobolevski*
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About the book:

This book can be understood by readers acquainted with only the fundamental notions of functional analysis given in a university program (for instance, familiarity with the principal chapters of the monograph of L. A. Lyusternik and V. K. Sobolev is sufficient). That part of the theory of unbounded selfadjoint operators which is used in the book is written out in detail. The authors also considered it appropriate to present, with complete proofs, some theorems on generators of semigroups of operators.

In other words, the investigation of many problems is effectively divided into three independent parts: transformation to an integral equation, investigation of the corresponding integral expression as an operator acting in function spaces, and, finally application of general methods of functional analysis to the investigation of the linear and non-linear equations. This book concerns the second of the above divisions. Here, linear operators acting in spaces L_α of summable functions are studied and criteria are established for continuity, regularity, compactness of linear operators and their fractional powers. In the investigation of concrete integral operators, the possibility of considering them in various spaces L_α is often important. In this connection operators are here studied simultaneously in the whole family of spaces L_α .

Contents:

- Chapter I: Linear operators in L_α spaces
- Chapter II: Continuity and compactness of linear integral operators
- Chapter III: Fractional powers of selfadjoint operators
- Chapter IV: Fractional powers of operators of positive type
- Chapter V: Nonlinear integral operators
- Chapter VI: Some applications

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