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Nota di contenuto	Preface; Contents; 1. Introduction; 1.1 Preliminary notions and notations; 1.1.1 Infinite matrices; 1.1.2 Analytic functions on disk; 1.1.3 Miscellaneous; 1.1.4 The Bergman metric; Notes; 2. Integral operators in infinite matrix theory; 2.1 Periodical integral operators; 2.2 Nonperiodical integral operators; 2.3 Some applications of integral operators in the classical theory of infinite matrices; 2.3.1 The characterization of Toeplitz matrices; 2.3.2 The characterization of Hankel matrices; 2.3.3 The main triangle projection; 2.3.4 $B(2)$ is a Banach algebra under the Schur product; Notes 3. Matrix versions of spaces of periodical functions 3.1 Preliminaries; 3.2 Some properties of the space $C(2)$ ; 3.3 Another characterization of the space $C(2)$ and related results; 3.4 A matrix version for functions of bounded variation; 3.5 Approximation of infinite matrices by matriceal Haar polynomials; 3.5.1 Introduction; 3.5.2 About the space $ms$ ; 3.5.3 Extension of Haar's theorem; 3.6 Lipschitz spaces of matrices; a characterization; Notes; 4. Matrix versions of Hardy spaces; 4.1 First properties of matriceal Hardy space; 4.2 Hardy-Schatten spaces

6.2 Some inequalities in Bergman-Schatten classes  
6.3 A characterization of the Bergman-Schatten space; 6.4 Usual multipliers in Bergman-Schatten spaces; Notes; 7. A matrix version of Bloch spaces; 7.1 Elementary properties of Bloch matrices; 7.2 Matrix version of little Bloch space; Notes; 8. Schur multipliers on analytic matrix spaces; Notes; Bibliography; Index

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### Sommario/riassunto

This book gives a unified approach to the theory concerning a new matrix version of classical harmonic analysis. Most results in the book have their analogues as classical or newer results in harmonic analysis. It can be used as a source for further research in many areas related to infinite matrices. In particular, it could be a perfect starting point for students looking for new directions to write their PhD thesis as well as for experienced researchers in analysis looking for new problems with great potential to be very useful both in pure and applied mathematics where classical analysis ha

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