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Nota di contenuto	Front matter -- Preface -- Contents -- Chapter 1. Characteristic functions -- Chapter 2. Correlation functions -- Chapter 3. Special properties -- Chapter 4. The extension problem -- Chapter 5. Selected applications -- Appendix A. Basic notation -- Appendix B. Basic analysis -- Appendix C. Advanced analysis -- Appendix D. Functional analysis -- Appendix E. Measure theory -- Appendix F. Probability -- Bibliography -- Index
Sommario/riassunto	In a certain sense characteristic functions and correlation functions are the same, the common underlying concept is positive definiteness. Many results in probability theory, mathematical statistics and stochastic processes can be derived by using these functions. While there are books on characteristic functions of one variable, books devoting some sections to the multivariate case, and books treating the general case of locally compact groups, interestingly there is no book devoted entirely to the multidimensional case which is extremely important for applications. This book is intended to fill this gap at least partially. It makes the basic concepts and results on multivariate characteristic and correlation functions easily accessible to both students and researchers in a comprehensive manner. The first chapter

presents basic results and should be read carefully since it is essential for the understanding of the subsequent chapters. The second chapter is devoted to correlation functions, their applications to stationary processes and some connections to harmonic analysis. In Chapter 3 we deal with several special properties, Chapter 4 is devoted to the extension problem while Chapter 5 contains a few applications. A relatively large appendix comprises topics like infinite products, functional equations, special functions or compact operators.