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| Nota di contenuto | Cover; Half-title; Title; Copyright; Contents; Preface; Notations; 1 Introduction; 2 The bootstrap principle; 3 Signal detection with the bootstrap; 4 Bootstrap model selection; 5 Real data bootstrap applications; Appendix 1 Matlab codes for the examples; Appendix 2 Bootstrap Matlab Toolbox; References; Index |
| Sommario/riassunto | The statistical bootstrap is one of the methods that can be used to calculate estimates of a certain number of unknown parameters of a random process or a signal observed in noise, based on a random sample. Such situations are common in signal processing and the bootstrap is especially useful when only a small sample is available or an analytical analysis is too cumbersome or even impossible. This book covers the foundations of the bootstrap, its properties, its strengths |

and its limitations. The authors focus on bootstrap signal detection in Gaussian and non-Gaussian interference as well as bootstrap model selection. The theory developed in the book is supported by a number of useful practical examples written in MATLAB. The book is aimed at graduate students and engineers, and includes applications to real-world problems in areas such as radar and sonar, biomedical engineering and automotive engineering.