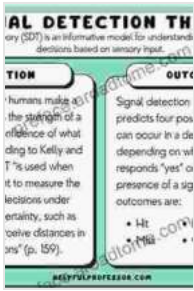


Unlock the Secrets of Weak Signal Detection: A Comprehensive Guide for Engineers and Researchers

Weak signals are often hidden within noisy and complex data, making their detection a challenging task. However, these signals can hold valuable information that can be crucial for making informed decisions in various fields such as communications, radar, and medical imaging. "Weak Signal Detection in Generalized Observations: Signals and Communication" provides a comprehensive and in-depth treatment of weak signal detection techniques, empowering engineers and researchers to effectively extract and interpret these signals.

The book begins by introducing the concept of generalized observations, which are measurements made in the presence of noise and other corrupting factors. These observations can take various forms, including scalar, vector, and matrix measurements. The book provides a thorough understanding of the statistical properties and characteristics of generalized observations, laying the foundation for effective weak signal detection.

The book explores an array of weak signal detection techniques, covering both classical and modern methods. Classical techniques, such as matched filtering and the generalized likelihood ratio test, are presented in detail, highlighting their strengths and limitations. Modern techniques, such as subspace methods and sparse signal recovery, are also discussed, providing readers with a comprehensive understanding of cutting-edge approaches in this field.



Advanced Theory of Signal Detection: Weak Signal Detection in Generalized Observations (Signals and Communication Technology) by lickho Song

★★★★☆ 4.5 out of 5

Language : English

File size : 31879 KB

Print length : 408 pages



Key Features of the Book

- **In-depth coverage of generalized observations:** The book thoroughly examines the statistical properties and characteristics of generalized observations, providing a solid foundation for weak signal detection.
- **Comprehensive review of classical and modern techniques:** Both classical and modern weak signal detection techniques are explored in detail, offering a balanced perspective on the field.
- **Real-world examples and applications:** The book includes numerous real-world examples and applications to demonstrate the practical relevance of weak signal detection in various fields.
- **Mathematical rigor and clarity:** The book maintains a high level of mathematical rigor while presenting concepts clearly and concisely, making it accessible to readers with diverse backgrounds.

- **MATLAB® exercises and solutions:** The book is accompanied by MATLAB® exercises and solutions, allowing readers to apply the techniques discussed in the book and reinforce their understanding.

"Weak Signal Detection in Generalized Observations: Signals and Communication" offers numerous benefits for engineers and researchers working in fields related to signal processing and communications:

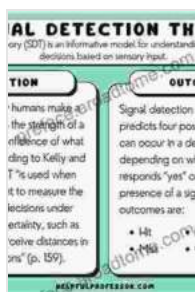
- **Enhanced signal detection capabilities:** The book provides a deep understanding of weak signal detection techniques, enabling engineers and researchers to improve their ability to extract and interpret weak signals from noisy data.
- **Advanced knowledge of generalized observations:** The book equips readers with a comprehensive understanding of the statistical properties and characteristics of generalized observations, essential for developing effective weak signal detection algorithms.
- **Practical insights from real-world applications:** The book's numerous real-world examples and applications provide valuable insights into the practical implementation of weak signal detection techniques.
- **Accelerated research and development:** The book serves as a valuable resource for engineers and researchers conducting research and development in the field of signal processing and communications.

"Weak Signal Detection in Generalized Observations: Signals and Communication" is intended for engineers and researchers in the field of

signal processing and communications, including:

- Signal processing engineers
- Communications engineers
- Radar engineers
- Medical imaging researchers
- Students pursuing advanced degrees in electrical engineering or computer science

"Weak Signal Detection in Generalized Observations: Signals and Communication" is an essential resource for engineers and researchers seeking to advance their understanding and capabilities in weak signal detection. The book's comprehensive coverage of generalized observations, classical and modern techniques, real-world examples, and MATLAB® exercises provide a solid foundation for effectively extracting and interpreting weak signals from noisy data. Embrace the power of weak signal detection and unlock the valuable information hidden within complex observations.



Advanced Theory of Signal Detection: Weak Signal Detection in Generalized Observations (Signals and Communication Technology) by lickho Song

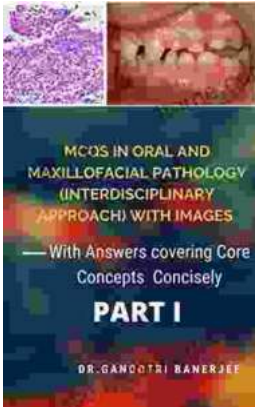
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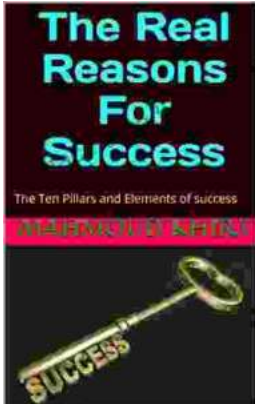
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