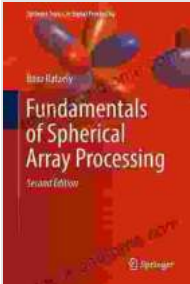


Fundamentals of Spherical Array Processing: A Comprehensive Guide for Engineers and Researchers



Fundamentals of Spherical Array Processing (Springer Topics in Signal Processing Book 16) by Loka L. Ashwood

★ ★ ★ ★ ☆ 4.4 out of 5

Language	: English
File size	: 39899 KB
Text-to-Speech	: Enabled
Enhanced typesetting	: Enabled
Print length	: 210 pages
Screen Reader	: Supported
X-Ray for textbooks	: Enabled

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Spherical arrays have emerged as a powerful tool in various fields, including acoustics, radar, communications, and sensor networks. This comprehensive guidebook provides a thorough understanding of the fundamentals of spherical array processing, empowering engineers and researchers to harness the full potential of this technology.

Key Features

- * In-depth exploration of spherical array theory, including array geometry, directivity, and beamforming
- * Detailed analysis of array signal processing algorithms, such as beamforming, localization, and tracking
- * Extensive coverage of applications in acoustics, radar, communications, and sensor networks
- * Step-by-step examples and practical tips to facilitate

understanding * Comprehensive references to original research and cutting-edge developments

Target Audience

This guidebook is ideal for engineers, researchers, and students in the fields of signal processing, acoustics, radar, communications, and sensor networks. It is also a valuable resource for professionals seeking to enhance their knowledge of spherical array processing for practical applications.

Section 1: Spherical Array Theory

* to spherical arrays * Array geometry and directivity * Beamforming fundamentals

Section 2: Array Signal Processing Algorithms

* Beamforming algorithms (delay-and-sum, MVDR) * Localization algorithms (MUSIC, ESPRIT) * Tracking algorithms (Kalman filter, particle filter)

Section 3: Applications in Acoustics

* Sound source localization and tracking * Acoustic imaging and beamforming * Underwater acoustics

Section 4: Applications in Radar

* Radar target tracking * Radar beamforming * Radar imaging

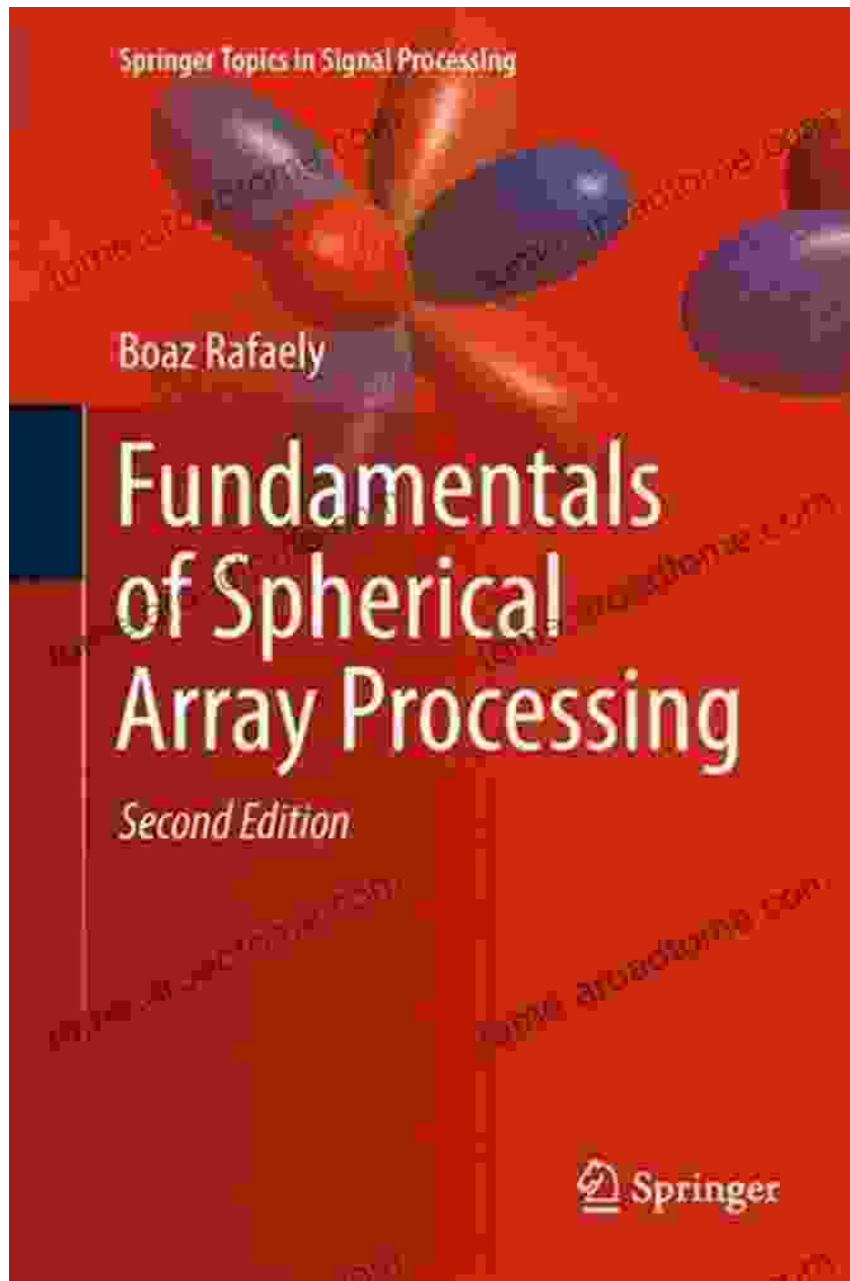
Section 5: Applications in Communications

* Beamforming for wireless communications * MIMO systems * 5G and beyond

Section 6: Applications in Sensor Networks

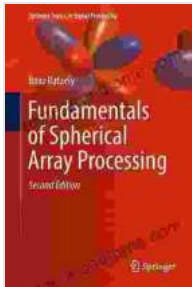
* Sensor localization and tracking * Environmental monitoring * Object detection and tracking

This comprehensive guidebook provides a solid foundation in the fundamentals of spherical array processing, equipping readers with the knowledge and skills to excel in this rapidly growing field. By harnessing the power of spherical arrays, engineers and researchers can unlock new possibilities in a wide range of applications, from acoustics and radar to communications and sensor networks.



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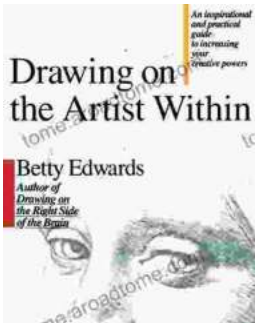
To Free Download your copy of Fundamentals of Spherical Array Processing, visit our website at [\[link to website\]](#). With its in-depth analysis, practical examples, and comprehensive coverage, this guidebook is an indispensable resource for anyone seeking to master the fundamentals of this cutting-edge technology.



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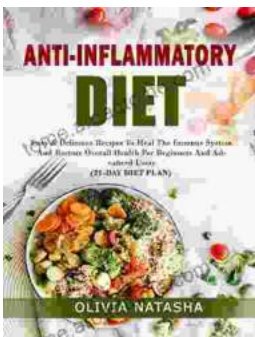
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