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Radar, Sonar & Navigation



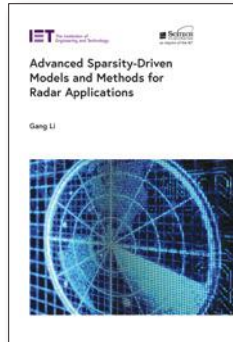
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HIGHLIGHTS

Advanced Sparsity-Driven Models and Methods for Radar Applications

Author: Gang Li, Tsinghua University, China

This book introduces advanced sparsity-driven models and methods and their applications in radar tasks such as detection, imaging and classification. It is based on research from the last decade, with a particular focus on applying compressed-sensing-based models and algorithms to solve practical problems in radar.



2020 / 264pp / £110 / \$145

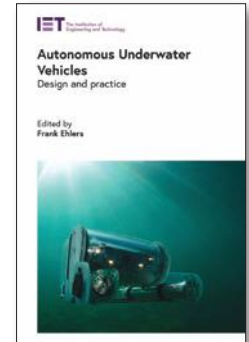
Print SBRA5350 / 978-1-83953-075-3

eBook SBRA535E / 978-1-83953-076-0

Autonomous Underwater Vehicles: Design and practice

Editor: Frank Ehlers, Bundeswehr Technical Center for Ships and Naval Weapons, Maritime Technology and Research (WTD 71), Germany

This book gives a state-of-the-art overview of the hot topic of autonomous underwater vehicle (AUV) design and practice. It covers a wide range of AUV application areas such as education and research, biological and oceanographic studies, surveillance purposes, military and security applications and industrial underwater applications.



2020 / 650pp / £140 / \$185

Print SBRA5250 / 978-1-78561-703-4

eBook SBRA525E / 978-1-78561-704-1

Deep Neural Network Design for Radar Applications

Editor: Sevgi Zubeyde Gurbuz, University of Alabama, USA

Novel deep learning models are achieving state-of-the-art accuracy in the area of radar target recognition, sometimes exceeding human-level performance. The book provides an introduction to the key aspects of machine learning that any radar engineer seeking to apply deep learning to radar signal processing ought to be aware of.



2020 / 400pp / £125 / \$160

Print SBRA5290 / 978-1-78561-852-9

eBook SBRA529E / 978-1-78561-853-6

Electronic Scanned Array Design

Author: John S. Williams

This book covers the fundamental principles of ESA antennas including basic design approaches and inherent design limitations. These insights will enable better appreciation of existing and planned ESA systems including their application to earth observation.



2020 / 350pp / £120 / \$155

Print SBRA5260 / 978-1-78561-929-8

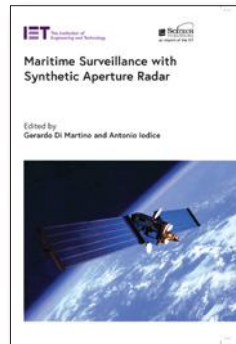
eBook SBRA526E / 978-1-78561-930-4

HIGHLIGHTS

Maritime Surveillance with Synthetic Aperture Radar

Editors: Gerardo Di Martino, University of Naples Federico II, Italy; Antonio Iodice, University of Naples Federico II, Italy

This book covers the use of SAR for maritime surveillance applications. It provides a comprehensive source of material on the subject, intended for SAR system engineers, private and public corporations, oceanographers, and remote-sensing researchers and end-users.



2020 / 300pp / £115 / \$150

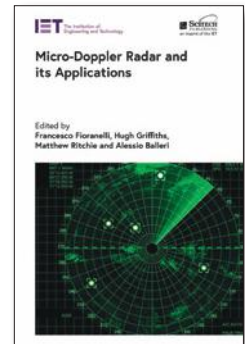
Print SBRA5210 / 978-1-78561-601-3

eBook SBRA521E / 978-1-78561-602-0

Micro-Doppler Radar and Its Applications

Editors: Francesco Fioranelli, Technical University of Delft, the Netherlands; Hugh Griffiths, University College London, UK; Matthew Ritchie, University College London, UK; Alessio Balleri, Cranfield University, UK

This book covers developments in radar micro-Doppler signatures and non-cooperative target recognition of moving targets including signatures of small drones and birds, automotive radar, passive radar for indoor applications, novel signal processing approaches using sparsity and deep learning, and Ultra Wide Band and FMCW radar chips.



2020 / 350pp / £125 / \$160

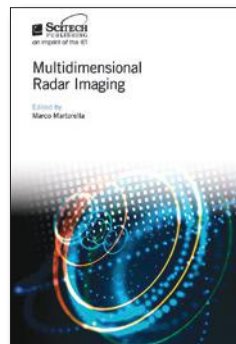
Print SBRA5310 / 978-1-78561-933-5

eBook SBRA531E / 978-1-78561-934-2

Multidimensional Radar Imaging

Editor: Marco Martorella, University of Pisa, Italy, and Radar and Surveillance Systems National Laboratory of the Italian Inter-University Consortium for Telecommunications (CNIT)

This book introduces a new framework which addresses the problem of radar imaging and target recognition as it jointly looks at optimising the use of multiple channels to significantly outperform classical radar imaging systems. It has been used in the military within NATO for the last few years and the technology is now declassified.



2019 / 356pp / £115 / \$150

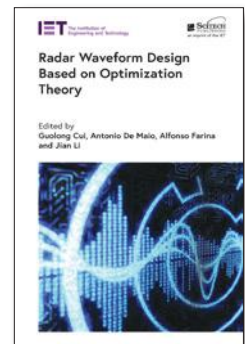
Print SBRA5270 / 978-1-78561-807-9

eBook SBRA527E / 978-1-78561-808-6

Radar Waveform Design Based on Optimization Theory

Editors: Guolong Cui, University of Electronic Science and Technology of China, Chengdu, China; Antonio De Maio, University of Naples Federico II, Italy; Alfonso Farina, consultant, Italy; Jian Li, University of Florida, USA.

This book provides an overview of radar waveform synthesis obtained as the result of computational optimization processes and covers the most challenging application fields. The book balances a practical point of view with a rigorous mathematical approach corroborated with a wealth of numerical case studies and some real experiments.



2020 / 350pp / £120 / \$155

Print SBRA5330 / 978-1-78561-943-4

eBook SBRA533E / 978-1-78561-944-1

HIGHLIGHTS

Ultra-Wideband Surveillance Radar

Author: Mark E. Davis, Medavis Consulting, USA

This text describes several UWB surveillance radar prototypes, including Multiple Antenna Surveillance Radar, Multibeam Synthetic Radar, and Geoscience SAR. These illustrate the recent development of multi-mode capabilities and based on the results of these prototypes, a novel multi-mode, multi-channel radar is presented.



2020 / 350pp / £120 / \$155

Print SBRA5340 / 978-1-83953-077-7

eBook SBRA534E / 978-1-83953-078-4

FORTHCOMING - to be published in 2021 and 2022

Title	Author(s)/Editor(s)	Price (£)	Price (\$)	ISBN	eISBN	Product code
An Introduction to RF Stealth. 2nd edition	Lynch	£145	\$190	978-1-83953-159-0	978-1-83953-160-6	SBRA540
Aviation Cybersecurity: Foundations, principles, and applications	Song, Hopkinson, de Cola, Alexandrovich and Liu (Eds)	£130	\$170	978-1-83953-321-1	978-1-83953-322-8	SBRA545
Electronic Warfare Against Passive Radar	O'Hagan, Schuepbach & Paine	£115	\$150	978-1-83953-197-2	978-1-83953-198-9	SBRA541
New Methodologies for Understanding Radar Data	Mishra & Brüggewirth (Eds)	£110	\$145	978-1-83953-188-0	978-1-83953-189-7	SBRA542
Radar Countermeasures for Unmanned Aerial Vehicles	Clemente, Fioranelli, Colone & Li (Eds)	£115	\$150	978-1-83953-190-3	978-1-83953-191-0	SBRA543
Staring Radar	Oswald & Baker	£120	\$155	978-1-78561-389-0	978-1-78561-390-6	SBRA518
Target Detection by Marine Radar. 2nd Edition	Wade	£130	\$210	978-1-78561-860-4	978-1-78561-861-1	SBRA528

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RECENT

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Advanced Sparsity-Driven Models and Methods for Radar Applications	Li	£110	\$145	978-1-83953-075-3	978-1-83953-076-0	SBRA535	2020
Autonomous Underwater Vehicles: Design and practice	Ehlers (Ed)	£140	\$185	978-1-78561-703-4	978-1-78561-704-1	SBRA525	2020
Deep Neural Network Design for Radar Applications	Gurbuz (Ed)	£125	\$160	978-1-78561-852-9	978-1-78561-853-6	SBRA529	2020
Electronic Scanned Array Design	Williams	£120	\$155	978-1-78561-929-8	978-1-78561-930-4	SBRA526	2020
Maritime Surveillance with Synthetic Aperture Radar	Di Martino & Iodice (Eds)	£115	\$150	978-1-78561-601-3	978-1-78561-602-0	SBRA521	2020
Micro-Doppler Radar and Its Applications	Fioranelli, Griffiths, Ritchie & Balleri (Eds)	£125	\$160	978-1-78561-933-5	978-1-78561-934-2	SBRA531	2020
Radar Waveform Design Based on Optimization Theory	Cui, de Maio, Farina & Li (Eds)	£120	\$155	978-1-78561-943-4	978-1-78561-944-1	SBRA533	2020
Ultra-Wideband Surveillance Radar	Davis	£120	\$155	978-1-83953-077-7	978-1-83953-078-4	SBRA534	2020
Photonics for Radar Networks and Electronic Warfare Systems	Bogoni, Laghezza & Ghelfi (Eds)	£110	\$145	978-1-78561-376-0	978-1-78561-377-7	SBRA516	2019
Multidimensional Radar Imaging	Martorella (Ed)	£115	\$150	978-1-78561-807-9	978-1-78561-808-6	SBRA527	2019
Shadowing Function from Randomly Rough Surfaces: Derivation and applications	Bourlier & Li	£110	\$145	978-1-78561-535-1	978-1-78561-536-8	SBRA519	2019
Systems Engineering for Ethical Autonomous Systems	Gillespie	£130	\$170	978-1-78561-372-2	978-1-78561-373-9	SBRA517	2019
Radar and Communication Spectrum Sharing	Blunt & Perrins (Eds)	£145	\$190	978-1-78561-357-9	978-1-78561-358-6	SBRA515	2018
Tactical Persistent Surveillance Radar with Applications	Lynch	£110	\$160	978-1-78561-650-1	978-1-78561-651-8	SBRA524	2018
Biologically-Inspired Radar and Sonar: Lessons from nature	Balleri, Griffiths & Baker (Eds)	£100	\$160	978-1-61353-235-5	978-1-61353-236-2	SBRA514	2017
Novel Radar Techniques and Applications (2-volume set)	Klemm, Nickel, Gierull, Lombardo, Griffiths & Koch (Eds)	£250	\$395	978-1-61353-229-4	N/A	SBRA512X	2017
Novel Radar Techniques and Applications: Volume 1: Real Aperture Array Radar, Imaging Radar, and Passive and Multistatic Radar	Klemm, Nickel, Gierull, Lombardo, Griffiths & Koch (Eds)	£130	\$195	978-1-61353-225-6	978-1-61353-227-0	SBRA512A	2017
Novel Radar Techniques and Applications: Volume 2: Waveform Diversity and Cognitive Radar, and Target Tracking and Data Fusion	Klemm, Nickel, Gierull, Lombardo, Griffiths & Koch (Eds)	£130	\$195	978-1-61353-226-3	978-1-61353-228-7	SBRA512B	2017
The Impact of Cognition on Radar Technology	Farina, De Maio & Haykin (Eds)	£100	\$160	978-1-78561-580-1	978-1-78561-581-8	SBRA520	2017

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