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Nota di contenuto	Dedication: P. M.Woodward and the Ambiguity Function, Lars Falk; Introduction: A Short History of Waveform Diversity, Eric L. Mokole and Michael C. Wicks; Section A: Waveform Diversity Paradigms; 1. Diversity Strategies: Lessons from Natural Systems, Michele Vespe, Gareth Jones, and Chris J. Baker; 2. Distributed and Layered Sensing, Michael C. Wicks and William Moore; 3. Waveform Diversity and Sensors as Robots in Advanced Military Systems, Donald D. Weiner, Michael C. Wicks, and Gerard T. Capraro 4. Implications of Diversity from a Sensing Point of View, Tapan K. Sarkar, Santana Burintramart, N. Yilmazer, Y. Zhang, Arijit De, Magdalena Salazar-Palma, M.A. Lagunas, Eric L. Mokole, and M.C. WicksSection B: Applications; Part I: Multi-mission Systems; 5. An Evolutionary Algorithm Approach to Simultaneous Multi-Mission Radar Waveform Design, Vincent J. Amuso and Jason Enslin; 6. Interlacing of Non-Uniform Doppler Waveforms and MetricSpace Geometry of Negative Curvature, F. Barbaresco 7. Evolutionary Algorithms Based Sparse SpectrumWaveform Optimization, Weixian Liu, Y. L. Lu, and Marc Lesturgie8. Intra-Pulse

Radar-Embedded Communications, Shannon D. Blunt and James M. Stiles; 9. Waveform Design for Joint Digital Beamforming Radar and MIMO Communications Operability, Christian Sturm and Werner Wiesbeck; 10. A Transform Domain Communication and Jamming Waveform, Abel Nunez, Vasu Chakravarthy, and James Caldwell; 11. Optimal Space-Time Transmit Signals for Multi-Mode Radar, Jim Stiles and Vishal Sinha; Part II: Long-Range Active Sensing 12. Waveform Diversity and Adaptive Signal Processing to Improve SBR GMTI Performance Degraded by MEO Antenna Mechanical Distortions, Richard S. Pierro, Scott E. Parker, Richard Schneible, Yuhong Zhang, and Abdelhak Hajjari 13. Multidimensional Waveform Encoding for Spaceborne Synthetic Aperture Radar Remote Sensing, Gerhard Krieger, Nicolas Gebert, and Alberto Moreira; 14. Time Reversed Over-The-Horizon Radar, Eung G. Paek, Joon Y. Choe, and Eric L. Mokole; 15. Issues with Orthogonal Waveform Use in MIMO HF OTH Radars, Ben A. Johnson, Gordon J. Frazer, and Yuri I. Abramovich Part III: Distributed Aperture Sensing 16. Waveform Diversity and Signal Processing Strategies in Multistatic Radar Systems, Ivan Bradaric, Gerard T. Capraro, and Michael C. Wicks; 17. A Framework for Optimal Code Design for MIMO Radar, Pinaki Ray and Langford White; 18. Space-Time Adaptive Processing for Frequency-Diverse Distributed Aperture Radars, Raviraj Adve, Earnest Lock, and Lorne Applebaum; 19. A Novel Waveform Diversity Model for Distributed Aperture Radars with Consideration on Environment Non-Stationarity, Luciano Landi and Raviraj S. Adve 20. Waveform Concepts and Design for Weather Radar Network, V. Chandrasekar and Nitin Bharadwaj

## Sommario/riassunto

This is the first book to discuss current and future applications of waveform diversity and design in subjects such as radar and sonar, communications systems, passive sensing, and many other technologies. Waveform diversity allows researchers and system designers to optimize electromagnetic and acoustic systems for sensing, communications, electronic warfare or combinations thereof. This book enables solutions to problems, explaining how each system performs its own particular function, as well as how it is affected by other systems and how those other systems may likewise be affected. It is