1. Record Nr. UNINA9910132497703321 Autore Chen Baixiao Titolo Synthetic impulse and aperture radar (SIAR): a novel multi-frequency MIMO radar / / Baixiao Chen and Jiangi Wu Pubbl/distr/stampa Singapore:,: Wiley,, 2014 ©2014 **ISBN** 1-118-60959-X 1-118-60958-1 1-118-60957-3 Descrizione fisica 1 online resource (438 p.) Disciplina 621.3848/5 Soggetti Synthetic aperture radar MIMO systems Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Cover; Title Page; Copyright; Contents; About the Authors; Preface; Acknowledgments; Chapter 1 Introduction; 1.1 Development of Modern Radar; 1.2 Basic Features of SIAR; 1.3 Four Anti Features of SIAR; 1.3.1 Anti-stealth of SIAR; 1.3.2 Anti-reconnaissance of SIAR; 1.3.3 Anti-ARM of SIAR; 1.3.4 Anti-interference of SIAR; 1.4 Main Types of MIMO Radar: 1.5 SIAR and MIMO Radar: 1.6 Organization of This Book: References; Chapter 2 Radar Common Signal Waveform and Pulse Compression; 2.1 Mathematical Form and its Classification of Radar Signal: 2.1.1 Signal Mathematical Form 2.1.2 Radar Signal Classification 2.2 The Ambiguity Function and Radar Resolution; 2.2.1 Definition and Properties of the Ambiguity Function; 2.2.2 Radar Resolution; 2.2.3 The Ambiguity Function of a Constant-Frequency Pulse; 2.3 FM Pulse Signal and its Pulse Compression; 2.3.1 Linear Frequency Modulation (LFM or Chirp) Pulse Signal; 2.3.2 NLFM Pulse Signal; 2.3.3 LFM Pulse Compression; 2.3.4 Range-Doppler Uncertainty Principle of LFM; 2.4 Phase Coded Pulse Signal and its Processing; 2.4.1 The Waveform and Its Characteristic of Binary Phase Coded Signals; 2.4.2 Barker Codes

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Sommario/riassunto

Analyzes and discusses the operating principle, signal processing method, and experimental results of this advanced radar technology This book systematically discusses the operating principle, signal processing method, target measurement technology, and experimental results of a new kind of radar called synthetic impulse and aperture radar (SIAR). The purpose is to help readers acquire an insight into the concept and principle of the SIAR, to know its operation mode, signal processing method, the difference between the traditional radar and itself, the designing ideals, and the developing me