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Autore	Coxson Gregory E
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Nota di contenuto	Optimal-Peak-Sidelobe Polyphase Codes -- Contents -- Preface -- References -- 1 Introduction -- 1.1 Elements of the History of Radar -- 1.1.1 Origins in the 19th Century -- 1.1.2 Early 20th Century: Radar Was in the Air, But Not Allowed to Land -- 1.1.3 The 1930s -- 1.2 Radar Signals -- 1.2.1 The Pulsed Signal -- 1.2.2 The First Pulsed Radar: NRL's Robert Page -- 1.3 Pulse Compression -- 1.3.1 Trade-Off Between Range and Resolution -- 1.3.2 The Matched Filter and Pulse Compression -- 1.3.3 The Autocorrelation Function -- 1.3.4 Search for the Best Codes -- 1.3.5 Complementary Code Sets -- References -- 2 Building the Framework -- 2.1 Background and Fundamentals -- 2.1.1 Bandpass Signals -- 2.1.2 The Matched Filter -- 2.1.3 A Narrowband Simplification -- 2.1.4 The Ambiguity Function -- 2.1.5 Properties of the Ambiguity Function -- 2.2 The Phase-Coded Pulse -- 2.2.1 The Phase-Coded Pulse -- 2.2.2 The Polyphase and Binary Codes -- 2.2.3 The Discrete Aperiodic Autocorrelation
Sommario/riassunto	This book provides an in-depth exploration of radar signal processing, focusing on binary and polyphase codes with low peak sidelobe levels. It covers the historical development of radar technologies, including pulse compression and matched filter techniques, which optimize signal-to-noise ratios. The authors delve into topics such as binary

Barker codes, optimization algorithms for phase-coded pulses, and complementary code sets for improved radar performance. The book is aimed at professionals and researchers in radar engineering, offering advanced mathematical frameworks and computational algorithms for designing radar systems. It emphasizes the application of these codes in military and commercial systems, enhancing target detection and resolution.
