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# **Radar Signals**





## Synopsis

A text and general reference on the design and analysis of radar signals As radar technology evolves to encompass a growing spectrum of applications in military, aerospace, automotive, and other sectors, innovations in digital signal processing have risen to meet the demand. Presenting a long overdue, up-to-date, dedicated resource on radar signals, the authors fill a critical gap in radar technology literature. Radar Signals features in-depth coverage of the most prevalent classical and modern radar signals used today, as well as new signal concepts developed in recent years. Inclusion of key MATLAB software codes throughout the book demonstrates how they dramatically simplify the process of describing and analyzing complex signals. Topics covered include: \* Matched filter and ambiguity function concepts \* Basic radar signals, with both analytical and numerical analysis \* Frequency modulated and phase-coded pulses \* Complete discussion of band-limiting schemes \* Coherent LFM pulse trains-the most popular radar signal \* Diversity in pulse trains, including stepped frequency pulses \* Continuous-wave signals \* Multicarrier phase-coded signals Combining lucid explanation, preferred signal tables, MATLAB codes, and problem sets in each chapter, Radar Signals is an essential reference for professionals-and a systematic tutorial for any seeking to broaden their knowledge base in this dynamic field.

### **Book Information**

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#### **Customer Reviews**

The authors provide a recent [2004] and up to date summary of what is publicly known about radar analysis. The usefulness of the book is enhanced by the extensive use of Matlab to study signals.

The reader is encouraged to use its many built-in functions. A great timesaver. Plus, Matlab was chosen because it can efficiently handle manipulations of large, sparse matrices. The text describes several instances in which these occur. Unlike some monographs, the book is also well suited as a text for a university course on the subject. Many problems are provided in each chapter. However, the value of the book would be enhanced by an accompanying website, supported by the authors or the publisher. This could easily make available the various code examples presented in the book, as well as others. Plus, there are certain tables in the book, like for the normalised form of some polyphase Barker codes, that are long sets of numbers. Right now, a reader who finds these useful has a tedious and error-prone task of manually transcribing them from the book. These tables could also have gone into the website. The latter need not be anything fancy. Just enough to make information easily available.

This is an oustanding piece of work and long overdue. Prof Levanon has an established and well deserved reputation in this field! This book is in the same genre and extremely well written. His treatment of topics like frequency modulated and phase coded pulses, analysis of pulse trains and stepped frequency pulses are second to none and very well explained! I strongly recommend this book for your radar shelf!!

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