



Tracking and Kalman Filtering Made Easy

By Eli Brookner

Download now

Read Online ➔

Tracking and Kalman Filtering Made Easy By Eli Brookner

A unique, easy-to-use guide to radar tracking and Kalman filtering

This book presents the first truly accessible treatment of radar tracking; Kalman, Swerling, and Bayes filters for linear and nonlinear ballistic and satellite tracking systems; and the voltage-processing methods (Givens, Householder, and Gram-Schmidt) for least-squares filtering to correct for computer round-off errors. Tracking and Kalman Filtering Made Easy emphasizes the physical and geometric aspects of radar filters as well as the beauty and simplicity of their mathematics. An abundance of design equations, procedures, and curves allows readers to design tracking filters quickly and test their performance using only a pocket calculator!

The text incorporates problems and solutions, figures and photographs, and astonishingly simple derivations for various filters. It tackles problems involving clutter returns, redundant target detections, inconsistent data, track-start and track-drop rules, data association, matched filtering, tracking with chirp waveform, and more. The book also covers useful techniques such as the moving target detector (MTD) clutter rejection technique. All explanations are given in clear and simple terms, including:

- * The voltage-processing approach to least-squares filtering
- * The correlation between such procedures as discrete orthogonal Legendre polynomial (DOLP) and voltage processing
- * The mathematical sameness of tracking and estimation problems on the one hand, and sidelobe canceling and adaptive array processing on the other
- * The massively parallel systolic array sidelobe canceler processor
- * Important computational accuracy issues
- * An appended comparison between the Kalman and the Swerling filters, written by Dr. Peter Swerling

Tracking and Kalman Filtering Made Easy is invaluable for engineers, scientists, and mathematicians involved in tracking filter design. Its straightforward approach makes it an excellent textbook for senior-undergraduate and first-year graduate courses.

 [**Download** Tracking and Kalman Filtering Made Easy ...pdf](#)

 [**Read Online** Tracking and Kalman Filtering Made Easy ...pdf](#)

Tracking and Kalman Filtering Made Easy

By Eli Brookner

Tracking and Kalman Filtering Made Easy By Eli Brookner

A unique, easy-to-use guide to radar tracking and Kalman filtering

This book presents the first truly accessible treatment of radar tracking; Kalman, Swerling, and Bayes filters for linear and nonlinear ballistic and satellite tracking systems; and the voltage-processing methods (Givens, Householder, and Gram-Schmidt) for least-squares filtering to correct for computer round-off errors. Tracking and Kalman Filtering Made Easy emphasizes the physical and geometric aspects of radar filters as well as the beauty and simplicity of their mathematics. An abundance of design equations, procedures, and curves allows readers to design tracking filters quickly and test their performance using only a pocket calculator!

The text incorporates problems and solutions, figures and photographs, and astonishingly simple derivations for various filters. It tackles problems involving clutter returns, redundant target detections, inconsistent data, track-start and track-drop rules, data association, matched filtering, tracking with chirp waveform, and more. The book also covers useful techniques such as the moving target detector (MTD) clutter rejection technique. All explanations are given in clear and simple terms, including:

- * The voltage-processing approach to least-squares filtering
- * The correlation between such procedures as discrete orthogonal Legendre polynomial (DOLP) and voltage processing
- * The mathematical sameness of tracking and estimation problems on the one hand, and sidelobe canceling and adaptive array processing on the other
- * The massively parallel systolic array sidelobe canceler processor
- * Important computational accuracy issues
- * An appended comparison between the Kalman and the Swerling filters, written by Dr. Peter Swerling

Tracking and Kalman Filtering Made Easy is invaluable for engineers, scientists, and mathematicians involved in tracking filter design. Its straightforward approach makes it an excellent textbook for senior-undergraduate and first-year graduate courses.

Tracking and Kalman Filtering Made Easy By Eli Brookner Bibliography

- Sales Rank: #1150274 in Books
- Published on: 1998-04-17
- Original language: English
- Number of items: 1
- Dimensions: 9.31" h x 1.17" w x 6.48" l, 1.82 pounds
- Binding: Hardcover
- 504 pages

 [**Download** Tracking and Kalman Filtering Made Easy ...pdf](#)

 [**Read Online** Tracking and Kalman Filtering Made Easy ...pdf](#)

Editorial Review

From the Publisher

This book is about radar tracking and the use of filters, particularly Kalman Filters. Tracking of moving targets, such as satellites, is complicated by the introduction of errors into the measurements resulting from noise and non-uniform vehicle motion. Such errors are smoothed out by filters. The book covers these filters from very simple, physical and geometric approaches.

From the Back Cover

A unique, easy-to-use guide to radar tracking and Kalman filtering

This book presents the first truly accessible treatment of radar tracking; Kalman, Swerling, and Bayes filters for linear and nonlinear ballistic and satellite tracking systems; and the voltage-processing methods (Givens, Householder, and Gram-Schmidt) for least-squares filtering to correct for computer round-off errors. Tracking and Kalman Filtering Made Easy emphasizes the physical and geometric aspects of radar filters as well as the beauty and simplicity of their mathematics. An abundance of design equations, procedures, and curves allows readers to design tracking filters quickly and test their performance using only a pocket calculator!

The text incorporates problems and solutions, figures and photographs, and astonishingly simple derivations for various filters. It tackles problems involving clutter returns, redundant target detections, inconsistent data, track-start and track-drop rules, data association, matched filtering, tracking with chirp waveform, and more. The book also covers useful techniques such as the moving target detector (MTD) clutter rejection technique. All explanations are given in clear and simple terms, including:

- The voltage-processing approach to least-squares filtering
- The correlation between such procedures as discrete orthogonal Legendre polynomial (DOLP) and voltage processing
- The mathematical sameness of tracking and estimation problems on the one hand, and sidelobe canceling and adaptive array processing on the other
- The massively parallel systolic array sidelobe canceler processor
- Important computational accuracy issues
- An appended comparison between the Kalman and the Swerling filters, written by Dr. Peter Swerling

Tracking and Kalman Filtering Made Easy is invaluable for engineers, scientists, and mathematicians involved in tracking filter design. Its straightforward approach makes it an excellent textbook for senior-undergraduate and first-year graduate courses.

About the Author

ELI BROOKNER, DSc, is a Consulting Scientist with Raytheon Company in Sudbury, Massachusetts. Over a long and distinguished career, he has conceived and/or designed numerous radar systems, including Wake Measurement Radar and the first TWT radar put into space. A world-renowned teacher and lecturer, he is editor and principal contributor of three previous books: Radar Technology, Aspects of Modern Radar, and Practical Phased Array Antenna Systems.

Users Review

From reader reviews:

Jack Williams:

Why don't make it to be your habit? Right now, try to ready your time to do the important action, like looking for your favorite e-book and reading a guide. Beside you can solve your problem; you can add your knowledge by the guide entitled Tracking and Kalman Filtering Made Easy. Try to make the book Tracking and Kalman Filtering Made Easy as your buddy. It means that it can to get your friend when you truly feel alone and beside that course make you smarter than ever. Yeah, it is very fortunated to suit your needs. The book makes you far more confidence because you can know anything by the book. So , let's make new experience in addition to knowledge with this book.

Rose Miller:

In this 21st centuries, people become competitive in each way. By being competitive now, people have do something to make these survives, being in the middle of the particular crowded place and notice by means of surrounding. One thing that oftentimes many people have underestimated this for a while is reading. Sure, by reading a book your ability to survive raise then having chance to stay than other is high. For yourself who want to start reading a new book, we give you this kind of Tracking and Kalman Filtering Made Easy book as starter and daily reading e-book. Why, because this book is greater than just a book.

Charles Myers:

In this time globalization it is important to someone to obtain information. The information will make professionals understand the condition of the world. The condition of the world makes the information easier to share. You can find a lot of sources to get information example: internet, newspaper, book, and soon. You will observe that now, a lot of publisher which print many kinds of book. Often the book that recommended to you personally is Tracking and Kalman Filtering Made Easy this guide consist a lot of the information in the condition of this world now. This kind of book was represented just how can the world has grown up. The dialect styles that writer require to explain it is easy to understand. Often the writer made some research when he makes this book. Here is why this book suited all of you.

Jeffrey Cooks:

Beside this Tracking and Kalman Filtering Made Easy in your phone, it could possibly give you a way to get nearer to the new knowledge or information. The information and the knowledge you are going to got here is fresh from oven so don't always be worry if you feel like an aged people live in narrow village. It is good thing to have Tracking and Kalman Filtering Made Easy because this book offers to you personally readable information. Do you often have book but you rarely get what it's exactly about. Oh come on, that wil happen if you have this with your hand. The Enjoyable arrangement here cannot be questionable, including treasuring beautiful island. Use you still want to miss this? Find this book and read it from now!

**Download and Read Online Tracking and Kalman Filtering Made
Easy By Eli Brookner #913SONTIAR0**

Read Tracking and Kalman Filtering Made Easy By Eli Brookner for online ebook

Tracking and Kalman Filtering Made Easy By Eli Brookner Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Tracking and Kalman Filtering Made Easy By Eli Brookner books to read online.

Online Tracking and Kalman Filtering Made Easy By Eli Brookner ebook PDF download

Tracking and Kalman Filtering Made Easy By Eli Brookner Doc

Tracking and Kalman Filtering Made Easy By Eli Brookner Mobipocket

Tracking and Kalman Filtering Made Easy By Eli Brookner EPub

913SONTIAR0: Tracking and Kalman Filtering Made Easy By Eli Brookner