

<<信号系统和变换>>

图书基本信息

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## 前言

The basic structure and philosophy of the previous editions of Signals , System and Transforms are retained in the third edition. New examples have been added and some examples have been revised to demonstrate key concepts more clearly. New figures have been added to better illustrate concepts such as aliasing , orthogonality of exponentials , data reconstruction , etc. The wording of many passages throughout the text has been revised to ease reading and improve clarity. In particular , we have greatly simplified the development of convolution , the Fourier Transform , and the Discrete Fourier Transform. Further , we use  $\delta$  in Sections 2.1 and 2.7 to demonstrate real world applications of the material. Chapters 5 , 6 , and 12 have been reorganized to consolidate the presentation on sampling and data construction and to reduce redundancy. Many end of chapter problems have been revised and numerous new problems are provided. Several of these new problems illustrate real world concepts in digital communications , filtering , and control theory. In addition , in response to requests from students at our universities , we have included answers to selected problems in Appendix H. We hope that this will enable the student to obtain immediate feedback about his/her understanding of new material and concepts. All MATLAB examples have been updated to ensure compatibility with Student Version Release 12. Several new MATLAB examples have been added. New to this edition is a third co author , Professor Eve Riskin from the University of Washington. Professor Riskin has contributed many ideas for the text including a companion web site at [http : //www , ee. washington.edu/class/SST\\_textbook/textbook , html](http://www.ee.washington.edu/class/SST_textbook/textbook.html).

This web site contains sample laboratories , lecture notes for Chapters 1 7 and Chapters 9 12 , and the MATLAB files listed in the textbook as well as several additional MATLAB files. It also contains a link to a second web site at [http : //www.ee.washington.edu/class/235dl/](http://www.ee.washington.edu/class/235dl/) , which contains interactive versions of the lecture notes for Chapters 1 7. Here , students and professors can find workedout solutions to all the examples in the lecture notes , as well as animated demonstrations of various concepts including transformations of continuous time signals , properties of continuous time systems ( including numerous examples on time invariance ) , convolution , sampling , and aliasing. Additional examples for discrete time material will be added as they are developed. In addition to the website listed above , the Department of Electrical Engineering , University of Washington , maintains an electronic mail list server for your use. For information on how to subscribe and unsubscribe , simply send a plain text E mail message with the word HELP as the message body ( and nothing else ) to [sstextbook.request@ee , washington , edu](mailto:sstextbook.request@ee.washington.edu). This list server will be used to communicate any typos found in the book or solution manual as well as point out new updates to the above mentioned web pages. This book is intended to be used primarily as a text for junior level students in engineering curricula and for self study by practicing engineers. It is assumed that the reader has had some introduction to signal models , system models , and differential equations ( as in , for example , circuits courses and courses in mathematics ) , and some laboratory work with physical systems.

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### 内容概要

《信号、系统和变换（英文版）（第4版）》对关于信号、系统和变换的理论与应用进行了清晰而全面的阐述。

介绍了有关信号与系统的数学背景知识，主要包括：傅里叶变换、傅里叶级数、拉普拉斯变换、离散时间、离散傅里叶变换以及z变换等。

本版在课程体系的组织上可以灵活地应对读者的不同侧重需求。

MATLAB示例贯穿于全书各章，同时MATLAB学生版本的高级功能也在例题和习题的应用中有所体现。

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全书包含了350多道习题和150多道例题。

给出的习题答案可使读者获得关于新概念理解的即时反馈。

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