

## <<信号与系统基础>>

### 图书基本信息

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### 内容概要

卡门等著的这本《信号与系统基础——应用Web与MATLAB(第3版)(英文影印版)》介绍了信号与系统的基本理论、基本分析方法及其应用,包括11

章内容:第1章到第7章是信号与系统的基本内容,讨论了时域中信号与系统的各种特性以及连续和离散时间系统的各种模型;从频域的观点分析了信号与系统,讨论了离散时间傅里叶变换(DTFT)和离散傅里叶变换(DFT

),系统的傅里叶分析,拉普拉斯变换,z变换和线性时不变系统的传输函数表示法等内容;第8章以后为扩展内容,包括利用传输函数表示法分析线性时不变连续时间系统,将传输函数思想用于控制问题;将拉普拉斯和z变换的思想用于数字滤波器和控制器的设计;对线性时不变连续时间和离散时间系统的状态描述的基本理论进行了阐述。

另外,本书还给出了大量的MATLAB软件仿真实例。

《信号与系统基础——应用Web与MATLAB(第3版)(英文影印版)》可作为电类各专业信号与系统课程的双语教材或参考书,也可供工程技术人员参考。

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## 章节摘录

版权页：插图：The background required for reading the book consists of the usual freshman/sophomore courses in calculus and elementary differential equations. It is also helpful, but not necessary, to have had some exposure to physics. The book is also intended to be used for self-study. Both authors have been teaching the material in the book to electrical engineering juniors for many years, and Bonnie Heck has been actively involved in the use of the Web for enhancing education in the fields of signals, systems, and controls. As noted, key features of the text include the use of online demos on the text-book website and the downloading of data from the Web in order to carry out data analysis. In many of the demos, students may change various values to see what results. For example, the frequencies making up a signal can be changed with the resulting effect on the signal displayed, and the parameters of a system's frequency response function ( or transfer function ) can be changed with the effect on system performance displayed. In some of the demos, the students can hear the sounds that correspond to the signals being considered. There is also a demo on a mass-spring-damper system that provides an animation of the output response resulting from the application of various inputs. Via this demo, students can actually see the characteristics of the response to an impulsive input, step input, and sinusoidal input. The reference to a demo in the text is given by an icon in the left-hand margin, as illustrated here.

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