<<信号与系统>>

图书基本信息

书名：<<信号与系统>>

13位ISBN编号：9787121185946

10位ISBN编号：7121185946

出版时间：2012-10

出版时间：电子工业出版社

作者：Simon Haykin（加）（西蒙 赫金）, Barry Van Veen（美）（巴里 范维恩） 著

页数：802

内容概要

本书全面系统地介绍了信号与系统的基本概念、理论、方法及应用。
全书共10章。
第1章介绍了信号与系统的基本概念；第2章讨论了线性非时变系统的时域分析方法；第3、4章分别讨论了离散时间周期与非周期信号、连续时间周期与非周期信号，以及线性非时变系统的傅里叶描述以及傅里叶描述在混合信号类型中的应用；第6、7章分别讨论了连续时间信号与离散时间信号的复指数描述；第5、8、9章分别介绍了信号与系统在通信系统、滤波器与均衡器以及线性反馈系统中的应用；第10章简要说明若干关于非稳定信号以及非线性与时变系统的课题。

书籍目录

章节摘录

Note that in both Figs. 8.14（a） and （b） the transfer function H（s） is in the form of a transfer impedance, defined by the Laplace transform of the output voltage v2（t）, divided by the Laplace transform of the current source i1（t）. Problem 8.8 Show that the transfer function of the filter in Fig. 8.14（b） is equal to the Butterworth function given in Eq. （8.37）. Problem 8.9 The passive filters depicted in Fig. 8.14 have impulse response of infinite duration. Justify this statement. The determination of the elements of a filter, starting from a particular transfer function H （s）, is referred to as network syntbesis. It encompasses a number of highly advanced procedures that are beyond the scope of this text. Indeed, passive filters occupied a dominant role in the design of communication and other systems for several decades, until the advent of active filters and digital filters in the 1960s. Active filters （using operational amplifiers） are discussed in Chapter 9; digital filters are discussed next. 8.8 Digital Filters A digital filter uses computation to implement the filtering action that is to be performed on a continuous-time signal. Figure 8.15 shows a block diagram of the operations involved in such an approach to design a frequency-selective filter; the ideas behind these operations were discussed in Section 4.7. The block labeled "analog-to-digital （A/D） converter" is used to convert the continuous-time signal x（t） into a corresponding sequence x（n） of numbers. The digital filter processes the sequence of numbers x（n） on a sample-by-sample basis to produce a new sequence of numbers, y（n）, which is then converted into the corresponding continuous-time signal by the -digital-to-analog （D/A） converter. Finally, the reconstruction （low-pass） filter at the output of the system produces a continuous-time signal y（t）, representing the filtered version of-the original input signal x（t）. Two important points should be carefully noted in the study of digital filters: 1. The underlying design procedures are usually based on the use of an analog or infiniteprecision model for the samples of input data and all internal calculations, this is done in order to take advantage of well-understood discrete-time, but continuous-am- plitude, mathematics. The resulting discrete-time filter provides the designer with a theoretical framework for the task at hand. 2. When the discrete-time filter is implemented in digital form for practical use, as depicted in Fig. 8.15, the input data and internal calculations are all quantized to a finite precision. ……

编辑推荐

《国外电子与通信教材系列：信号与系统（第2版）（英文版）》各章都有用MATLAB语言解题的内容、参考资料及进一步的阅读材料，并配有相当数量的例题。
通过书中大量的各类习题和计算机实验题，能够使读者开阔视野，为读者提供了足够的训练空间。

<<信号与系统>>