<<数字信号处理>>

图书基本信息

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内容概要

Mitra教授的《数字信号处理——基于计算机的方法》（第2版）（影印版）于2001年由清华大学出版社推出以来，得到了广大院校师生的一致好评，并对国内高校双语教学的展开起到了积极的推动作用。

现在推出的第3版编影印片，由国内知名教授根据教学经验和教学要求提出缩编方案，使之既满足国内学生阅读国外经典教材的需求，又最大程度地维护原著的特　色与风格。

本书非常适合电类专业本科生用作教材，也可作为研究生的参考用书和工程技术人员的自觉用书。

Mitra教授是国际上著名的信号处理专家。
他在加利福尼亚大学伯克利分校获得硕士和博士学位，先后在康奈尔大学、AT&T贝尔实验室、加利福尼亚大学截维斯分校、圣?巴巴拉分校任教和工作。
他曾任圣?巴巴拉分校电气与计算机工程系主任，IEEE电路与电系统学会的主席，IEE、AAAS和SPIE学会的Fellow，多个国际著名杂志的编委，并获得多项企业和学术界工程院院士、芬兰科学院院士、挪威技术科学院院士、墨西哥工程院外籍院士等。

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书籍目录

章节摘录

版权页： 插图： Seismic signals also play an important role in the geophysical exploration for oil and gas [Rob80].In this type of application, linear arrays of seismic sources,such as high-energy explosives,are placed at regular intervals on the ground surface.The explosions cause seismic waves to propagate through the subsurface geological structures and reflect back to the surface from interfaces between geological strata.The reflected waves are converted into electrical signals by a composite array of geophones laid out in certain patterns and displayed as a two-dimensional signal that is a function of time and space,called a trace gather,as indicated in Figure 1,15.Before these signals are analyzed,some preliminary time and amplitude corrections are made on the data to compensate for different physical henomena.From the corrected data,the time differences between reflected seismic signals are used to map structural deformations,whereas the amplitude changes usually indicate the presence of hydrocarbons. Speech Signals The acoustic theory of speech production has led to a range of mathematical models for the representation of speech signals.A speech signal is created by exciting the vocal tract using either quasi-periodic puffsof air or by creating turbulent air flow around a constriction in the vocal tract or by a mixture of these two sound sources [De193],[Rab78].So-called voiced sounds are generated when air is forced through the tensed glottis,causing it to vibrate in an oscillatory manner and generating pseudo-periodic pulses of air that excite the vocal tract.Included in the class of voiced sounds are vowels such as/I/(as in 'big') or/ae/(as in 'bad');voiced consonants such as/b/,/d/,/g/,/m/,/n/and so on;and so-called liquids and glides such as/w/,/l/,/r/,and/y/.4 Unvoiced sounds are generated by forming a constriction at some point in the vocal tract,which causes the air flow to become turbulent (noise-like) and to act as the excitation source for sounds such as/f/,/s/,/sh/and so forth.Finally,there is a class of sounds that utilizes both sources of excitation and hence has characteristics of both voiced sounds and unvoiced sounds.Among this class of sounds are the voiced fricatives such as/v/,/z/,and/zh/.

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