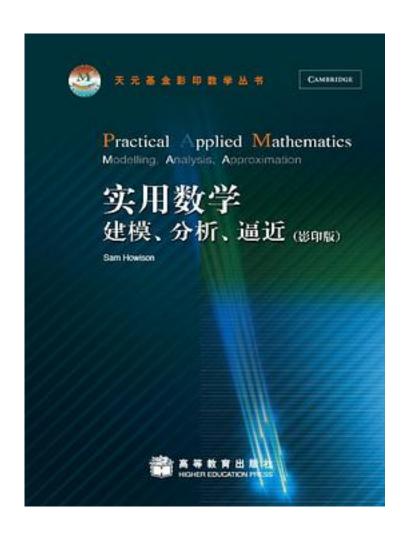
实用数学 (影印版)



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本书内容分为三部分:建模,讲述了建模的一些原则(包括物理定律、本构关系及守恒定律),量纲分析(包括Buckingham的Pi定理)等;分析技巧,讲述了偏微分方程和广义函数的基础知识;渐近分析,讲述了渐近展开的基本概念,正则摄动展开,边界层和多重尺

度法等。 目录 Preface Part I Modelling techniques 1 The basics of modelling 1.1 Introduction 1.2 What do we mean by a model? 1.3 Principles of modelling: physical laws and constitutive relations 1.4 Conservation laws 1.5 General remarks 1.6 Exercises 2 Units, dimensions and dimensional analysis 2.1 Introduction 2.2 Units and dimensions 2.3 Electric fields and electrostatics 2.4 Sources and further reading 2.5 Exercises 3 Nondimensionalisation 3.1 Nondimensionalisation and dimensionless parameters 3.2 The Navier-Stokes equations and Reynolds numbers 3.3 Buckingham's Pi-theorem 3.4 Sources and further reading 3.5 Exercises 4 Case studies: hair modelling and cable laying 4.1 The Euler-Bernoulli model for a beam 4.2 Hair modelling 4.3 Undersea cable laying

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