

CONTENTS

Introduction	III
Chapter 1. The Relaxed Saint-Venant Problem	1
1.1. Preliminaries	1
1.2. Properties of the Solutions to the Relaxed Saint-Venant Problem	3
1.3. A Method of Construction of Saint-Venant's Solutions	6
1.4. Minimum Energy Characterizations of Saint-Venant's Solutions	12
1.5. Truesdell's Problem	16
1.6. Saint-Venant's Principle	21
Chapter 2. Theory of Loaded Cylinders: The Problems of Almansi and Michell	31
2.1. Preliminaries	31
2.2. Almansi-Michell Problem	32
2.3. Almansi's Problem	36
2.4. Applications	40
Chapter 3. Anisotropic Materials	44
3.1. Preliminaries	44
3.2. Generalized Plane Strain Problem	45
3.3. Extension, Bending and Torsion	48
3.4. Application	53
3.5. Flexure	55
3.6. Minimum Energy Characterizations of Solutions	58
3.7. A Solution of Truesdell's Problem	60
3.8. The Problems of Almansi and Michell	63

Chapter 4. Heterogeneous Media	68
4.1. Preliminaries	68
4.2. Elastic Cylinders Composed of Nonhomogeneous and Isotropic Materials	70
4.3. Elastic Cylinders Composed of Nonhomogeneous and Anisotropic Materials	85
4.4. Applications to the Linear Thermoelastostatics	90
Chapter 5. Saint-Venant's Problem for Cosserat Elastic Bodies	95
5.1. Basic Equations	95
5.2. The Relaxed Saint-Venant's Problem	98
5.3. Characteristic Solutions	101
5.4. Saint-Venant's Principle	107
5.5. Plane Strain Problem	112
5.6. Extension, Bending and Torsion	113
5.7. Flexure	122
5.8. Minimum Principles	127
5.9. Global Strain Measures	130
5.10. Theory of Loaded Cylinders	134
5.11. Applications	143
References	148
Subject index	162