



COUPLED PROCESSES IN SUBSURFACE DEFORMATION, FLOW, AND TRANSPORT

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COUPLED PROCESSES IN SUBSURFACE DEFORMATION, FLOW, AND TRANSPORT

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Abstract: This book presents the fundamental concepts and analytical and numerical approaches available in representing deformation, flow, and transport behavior in geologic media as relevant to many engineering disciplines – civil, mining, petroleum, environmental, chemical, process – and the geological sciences. The individual processes governing deformation, flow, and transport are presented, with emphasis on the coupling and feedbacks present where solid deformation, fluid flow, and solute transport combine, and in the representation of heterogeneous media through multi-porosity approaches. Analytical and numerical solutions for subsurface systems subjected to varying mechanical, thermal, and chemical disturbances are presented. The implications of the theory and solutions presented are reflected in the example applications included throughout the text and in the final chapter.

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Manufactured in the United States of America.

To our parents: Demao and Yongzhi, and Jack and Rosalind.

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Contents

ACKNOWLEDGEMENTS	ix
PREFACE	xi
NOMENCLATURE	xiii
1 INTRODUCTION	1
1.1 STATE OF THE ART	1
1.1.1 Individual Process	1
1.1.2 Multiple Processes	7
1.1.3 Modeling Methodology	10
1.2 CONCEPTUAL PRELIMINARIES	13
1.2.1 Concepts and Assumptions	13
1.2.2 Fundamental Formulations	16
1.2.3 Definition of Heterogeneity and Anisotropy	18
1.2.4 Definition of Coupled Process	20
1.3 NOTATION PRELIMINARIES	21
1.3.1 Tensor	21
1.3.2 Sign Convention	24
2 DEFORMATION	27
2.1 INTRODUCTION	27
2.2 MATHEMATICAL FORMULATION	28
2.2.1 Homogeneous Media	28
2.2.2 Heterogeneous Media	30
2.3 PARAMETRIC STUDY	36
2.3.1 Effective Stress Law	36
2.3.2 Parametric Relations in Coupled Processes	49
2.3.3 Anisotropic Properties	56
3 FLOW	67
3.1 INTRODUCTION	67
3.2 MATHEMATICAL FORMULATION	67

3.2.1	Homogeneous Media	68
3.2.2	Heterogeneous Media	79
3.3	PARAMETRIC STUDY	95
3.3.1	Permeability	95
3.3.2	Compressibility	109
3.3.3	Anisotropic Effect	112
4	TRANSPORT	115
4.1	INTRODUCTION	115
4.2	MATHEMATICAL FORMULATION	115
4.2.1	Homogeneous Media	116
4.2.2	Heterogeneous Media	122
4.2.3	Comparative Analysis	141
4.2.4	Stochastic Processes	143
4.3	PARAMETRIC STUDY	148
4.3.1	Parameters for Homogeneous Media	148
4.3.2	Sensitivity Analysis for Heterogeneous Media	150
4.3.3	Convection-Dominated Transport	155
5	ANALYTICAL SOLUTION	163
5.1	INTRODUCTION	163
5.2	LAPLACE TRANSFORM	163
5.2.1	Flow	164
5.2.2	Transport	168
5.3	FOURIER TRANSFORM	172
5.3.1	Flow	174
5.3.2	Nonisothermal Flow and Deformation	177
5.4	HANKEL TRANSFORM	181
5.4.1	Flow	181
5.4.2	Flow and Deformation	188
5.5	DIFFERENTIAL OPERATOR METHOD	194
5.5.1	Flow	195
5.5.2	Transport	205
6	NUMERICAL SOLUTION	215
6.1	INTRODUCTION	215
6.2	FINITE ELEMENT PRELIMINARIES	216
6.2.1	Numerical Integration	216
6.2.2	Shape Functions	216
6.2.3	Global and Local Coordinate Mapping	218
6.2.4	Construction of a System of Equations	219
6.3	FINITE ELEMENT FORMULATION	219
6.3.1	Deformation	219
6.3.2	Flow	222

6.3.3	Coupled Deformation and Flow	225
6.4	FINITE ELEMENT MODEL	231
6.4.1	Cylindrical Model	231
6.4.2	Generalized Plane Strain	233
6.4.3	Dual-Porosity Media	236
6.4.4	Two-Phase Fluid Flow	240
6.5	MODEL VALIDATION	251
6.5.1	Analytical Solution of 1-D Consolidation	251
6.5.2	Comparative Analysis	255
7	APPLICATION	265
7.1	INTRODUCTION	265
7.2	TUNNEL SUBSIDENCE	265
7.2.1	Problem Definition	266
7.2.2	Numerical Modeling	266
7.2.3	Concluding Remarks	268
7.3	SLOPE STABILITY	269
7.3.1	Problem Definition	269
7.3.2	Finite Element Simulation	269
7.3.3	Case Analysis	271
7.3.4	Concluding Remarks	273
7.4	PERMEABILITY DETERMINATION	274
7.4.1	Unstressed Condition	274
7.4.2	Stressed Condition	280
7.4.3	Concluding Remarks	287
7.5	WELL TESTING	288
7.5.1	Flow	288
7.5.2	Flow and Deformation	288
7.5.3	Concluding remarks	293
7.6	CONTAMINANT TRANSPORT	293
7.6.1	Matrix Diffusion and Matrix Replenishment	293
7.6.2	Brief Formulation	296
7.6.3	Simulation	299
7.6.4	Concluding Remarks	302
	REFERENCES	305
	INDEX	325

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