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NUMERO F 6146

NOM : Mme PERRIA

DATE ENVOI : 25 SEP. 1990
25 OCT. 1990

DATE RETOUR :

*AUTEURS .VREUGDENHIL C.B 66/71434
*TYPE .LIVRE
*TITRE .Computational hydraulics.en introduction
*SOURCE .BERLIN,SPRINGER VERLAG
*DATE .1989
*PAGES .182
*COTE .Fs146
*LECTEUR

X1 X3

Titre original :

Hydraulique et informatique. Les outils mathématiques permettant la modélisation des phénomènes et leurs applications aux problèmes d'estuaire ou du littoral et à la mécanique ondulatoire (grandes ondes). F 6146.

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Cornelis B. Vreugdenhil

Computational Hydraulics

An Introduction



Springer-Verlag

F6146

The book addresses computational hydraulics (or computational fluid dynamics). The purpose is to give non-specialist readers sufficient insight to handle real-life problems. It is not directed to specialist developers of computer software for such problems, although it will be a good starting point for them. It describes numerical methods for solving flow and transport problems to a sufficient level to understand other methods as well. In contrast with most other books in this field, a great deal of attention is given to judging and predicting the performance of the methods. The material is not new, but organized in a new way to provide maximal understanding. The subject matter is illustrated with simple but realistic examples from hydraulic, environmental, river and coastal engineering. This will enable the reader to recognize the numerical effects in more complicated applications in his own practice. The benefit is not that one can write (or even copy) ready-made computer programs, but that one knows how to work reliably with existing software.

ISBN 3-540-50606-3
ISBN 0-387-50606-3

Contents

1. Introduction 1

2. Water quality in a Lake 5
2.1. Mathematical Formulation 5
2.2. Exercises 9

3. Numerical solution for Box Model 10
3.1 Principle 10
3.2 Stability and Accuracy 11
3.3. Example 13
3.4. Implicit Method 14
3.5. Exercises 15

4. Transport of a Dissolved Substance 16
4.1. Mathematical Formulation 16
4.2. Numerical Solution 19
4.3. Exercises 22

5. Explicit Finite-Difference Methods 23
5.1. Two-Level Methods 23
5.2. The Leap-Frog Method 25
5.3. The CFL Condition 26
5.4. Truncation Error 27
5.5. Wave Propagation 28
5.6. Exercises 29

6. Kinematic waves 30
6.1. Theory 30
6.2. Example 31

7. Diffusion 34
7.1. Groundwater Flow in a Horizontal Layer 34
7.2. Explicit Finite-Difference Method 37
7.3. Implicit Finite-Difference Method 38
7.4. The Thomas Algorithm 40

41
42
43
43
44
45
46
47
47
49
50
51
52
52
54
56
56
58
59
60
61
61
61
63
64
64
65
68
69
69
71
71
74
74
75
77
78
80
82

15. Long Waves 83
15.1. Simplified Formulation 83
15.2. Characteristics 84
15.3. Weakly Reflecting Boundary Conditions 86
15.4. Example 87
15.5. Wave Propagation 87
15.6. Example 91
15.7. Exercises 93

16. Numerical Methods for Long Waves 94
16.1. Leap-Frog Method 94
16.2. Stability of the Leap-Frog Method 95
16.3. Example 97
16.4. Implicit Methods 100
16.5. Numerical Wave Propagation 103
16.6. Example 106
16.7. Exercises 108

17. Long Waves in Two-Dimensional Areas 110
17.1. Mathematical Formulation 110
17.2. Wave Propagation and Characteristics 111
17.3. Boundary Conditions 115
17.4. Example 116

18. Finite-Difference Methods for Two-Dimensional Long Waves 120
18.1. Grids 120
18.2. Explicit Method 122
18.3. Alternating-Direction Implicit Method 123
18.4. Stability 125
18.5. Wave Propagation 128
18.6. Example 132
18.7. Exercises 136

19. Potential Flow 137
19.1. Irrotational Flow 137
19.2. Potential and Stream Function 138
19.3. Characteristics and Boundary Conditions 139
19.4. Pressure 141
19.5. Exercises 141

20. Finite-Difference Methods for Potential Flow 143
20.1. Difference Equation 143
20.2. Accuracy 145
20.3. Example 147
20.4. Exercises 150

7.5. Application 41
7.6. Exercises 42

8. Numerical Accuracy for Diffusion Problems 43
8.1. Fourier Series 43
8.2. Transfer Function 44
8.3. Numerical Representation 45
8.4. Exercises 46

9. Diffusion Model for Coastline Development 47
9.1. Mathematical Formulation 47
9.2. Initial and Boundary Conditions 49
9.3. Example 50
9.4. Exercises 51

10. Consolidation of Soil 52
10.1. Mathematical Formulation 52
10.2. Numerical Example 54

11. Convection-Diffusion 56
11.1. Transport of a Dissolved Substance 56
11.2. Numerical Method 58
11.3. Application 59
11.4. Exercises 60

12. Numerical Accuracy for Convection-Diffusion 61
12.1. Wave Propagation 61
12.2. Example 61
12.3. Numerical Diffusion 63
12.4. Example 64
12.5. Convection only 64
12.6. Wiggles 65
12.7. Exercises 68

13. Salt intrusion in Estuaries 69
13.1. Formulation 69
13.2. Accuracy Mean Concentration 71
13.3. Accuracy for Tidal Fluctuation 71

14. Boundary Layers 74
14.1. Suspended Sediment Transport 74
14.2. Example 75
14.3. Boundary-Layer Flows 77
14.4. Pressure Gradient 78
14.5. Developing Flow in a River 80
14.6. Exercises 82

21. Finite-Element Method 151
21.1. Principle 151
21.2. The Galerkin Method 154
21.3. Boundary Conditions 155
21.4. Comparison with Finite-Difference Method 155
21.5. Groundwater Flow 157
21.6. Exercises 162

Appendices 163

A1. Long Waves 163
A1.1. Mathematical Formulation for Rivers 163
A1.2. Mathematical Formulation in Two Dimensions . . 165
A1.3. Characteristics 166
A1.4. Linearization 167
A1.5. Wave Propagation 169
A2. Linear Triangular Finite Elements 175

References 178

Subject Index 181