Computational Fluid Dynamics. Edition No. 2

Description: The second edition of Computational Fluid Dynamics represents a significant improvement from the first edition. However, the original idea of including all computational fluid dynamics methods (FDM, FEM, FVM); all mesh generation schemes; and physical applications to turbulence, combustion, acoustics, radiative heat transfer, multiphase flow, electromagnetic flow, and general relativity is still maintained. The second edition includes a new section on preconditioning for EBE-GMRES and a complete revision of the section on flowfield-dependent variation methods, which demonstrates more detailed computational processes and includes additional example problems. For those instructors desiring a textbook that contains homework assignments, a variety of problems for FDM, FEM and FVM are included in an appendix. To facilitate students and practitioners intending to develop a large-scale computer code, an example of FORTRAN code capable of solving compressible, incompressible, viscous, inviscid, 1D, 2D and 3D for all speed regimes using the flowfield-dependent variation method is made available.

Contents:

Part I - Preliminaries:
1. Introduction;
2. Governing equations;

Part II - Finite Difference Methods:
3. Derivation of finite difference equations;
4. Solution methods of finite difference equations;
5. Incompressible viscous flows via finite difference methods;
6. Compressible flows via finite difference methods;
7. Finite volume methods via finite difference methods;

Part III - Finite Element Methods:
8. Introduction to finite element methods;
9. Finite element interpolation functions;
10. Linear problems;
11. Nonlinear problems/convection-dominated flows;
12. Incompressible viscous flows via finite element methods;
13. Compressible flows via finite element methods;
14. Miscellaneous weighted residual methods;
15. Finite volume methods via finite element methods;
16. Relationships between finite differences and finite elements and other methods;

Part IV - Automatic Grid Generation, Adaptive Methods and Computing Techniques:
17. Structured grid generation;
18. Unstructured grid generation;
19. Adaptive methods;
20. Computing techniques;

Part V - Applications:
21. Applications to turbulence;
22. Applications to chemically reactive flows and combustion;
23. Applications to acoustics;
24. Applications to combined mode radiative heat transfer;
25. Applications to multiphase flows;
26. Applications to electromagnetic flows;
27. Applications to relativistic astrophysical flows; Appendices.

Order by Fax - using the form below
Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct and select the format(s) you require.

Product Name: Computational Fluid Dynamics. Edition No. 2
Web Address: http://www.researchandmarkets.com/reports/2128754/
Office Code: SCBRW5E4

Product Formats
Please select the product formats and quantity you require:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Copy (Hard Back):</td>
<td>USD 117 + USD 29 Shipping/Handling</td>
</tr>
<tr>
<td>Hard Copy (Paper back):</td>
<td>USD 82 + USD 29 Shipping/Handling</td>
</tr>
</tbody>
</table>

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in BLOCK CAPITALS

Title: [ ] Mr [ ] Mrs [ ] Dr [ ] Miss [ ] Ms [ ] Prof
First Name: ___________________________ Last Name: ___________________________
Email Address: * ___________________________
Job Title: ___________________________
Organisation: ___________________________
Address: ___________________________
City: ___________________________
Postal / Zip Code: ___________________________
Country: ___________________________
Phone Number: ___________________________
Fax Number: ___________________________

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code:

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World