

有限元素法特論

Special Topics on Finite Element Method

1. Introduction to numerical methods for solving ODE and PDE
2. Weighting residual method and variational principle
3. Introduction to Comsol Multiphysics
4. 1-D Finite Element solution to ODE
5. 1-D Finite Element solution to 1-D heat equation
6. 1-D Finite Element solution to 1-D wave equation
7. Selected topics on fluid solid coupling problem
8. Selected topics on cooling problem of personal computer
9. Selected topics on vibration of structure
10. Selected topics on impact problem
11. Selected topics on vibration of piezoelectric materials
13. Selected topics on problems of nonlinear materials
14. Selected topics on problems of multiphysics, such as biosensor, micropump, micromixer, carbon nanotube.

Ref:

1. Gouri Dhatt and Gilbert Touzot, 1982. The Finite Element Method Displayed. John Wiley & Sons.
2. Comsol Multiphysics, Online manual, v3.3.
3. R.D. Cook, 1982. Concepts and Application of Finite Element Analysis. John Wiley & Sons.