

CONTENTS

Preface	vii
Contents	ix
K.W. Morton, Basic course in finite element methods	1
M.O. Bristeau, R. Glowinski and J. Periaux, Numerical methods for the Navier–Stokes equations. Applications to the simulation of compressible and incompressible viscous flows	73
K.W. Morton, Finite element methods for hyperbolic equations	189
J. Linderberg, Finite element methods in quantum mechanics	209
M. Costabel, Principles of boundary element methods	243
J. Blum, Numerical simulation of the plasma equilibrium in a Tokamak	275
R. Gruber, Finite elements in magnetohydrodynamics: ideal linear stability problem	299
K. Appert, S. Succi, J. Vaclavik and L. Villard, Finite elements applied to plasma waves	335
P. Lesaint, Finite element methods for the transport equation	351
J.-L. Desboilles, J.-J. Droux, J. Rappaz and M. Rappaz, Simulation of solidification of alloys by the finite element method	371
J.K. Reid, Algebraic aspects of finite element solutions	385