SYMPOSIUM ON FINITE ELEMENT METHODS FOR NONLINEAR AND SINGULAR PROBLEMS

University of Durham, 26 June - 6 July 1980

PROGRAMME

**FRIDAY
7 June**

CHAIRMAN - J.R. Whiteman

9.30		Welcome by J.R. Whiteman
9.45-10.45	J.T. ODEN	Penalty methods and reduced integration
11.20-12.20	I. HLAVACEK	A finite element solution for plasticity with strain hardening

CHAIRMAN - P.A. Raviart

4.45-6.00	K.W. MORTON	Finite element methods for compressible flow calculations

**SATURDAY
8 June**

CHAIRMAN - J.T. Oden

9.15-10.00	J.E. AKIN	Techniques for developing singular elements
10.05-10.50	R.W. THATCHER	Grid refinement and error control for finite element solutions
11.20-12.20	I. BABUSKA	The reliable estimates and adaptive procedure in the finite element method

CHAIRMAN - K.W. Morton

4.45-5.30	T. DUPONT	Mesh modification for time dependent problem
5.45-6.30	J. NITSCHE	On Stephan problems

**MONDAY
10 June**

CHAIRMAN - G. Fix

9.15-10.00	N. PAPAMICHAEL	The use of singular functions in numerical conformal mapping techniques
10.05-10.50	E. STEPHAN	A Fix method for the mixed boundary value problem of the Laplacian in a polyhedral domain
11.20-12.20	P. GRISVARD	Some numerical applications of the Green's formula

CHAIRMAN - A.R. Mitchell

4.45-5.30	W. WOOD	On the coupled nonlinear equations of ground water flow and softwater intrusion in a coastal aquifer
5.45-6.30	M. O'CARROLL	Critical flow in hydraulics

**TUESDAY
1 July**

CHAIRMAN - D.F. Griffiths

9.15-10.00	S. OSHER	An upwind finite element method for nonlinea hyperbolic conservation laws and singular perturbations
10.05-10.50	K. PARROTT	A generalised Galerkin method applied to the Buckley-Leverett equation
11.20-12.20	A.R. MITCHELL	Generalised Galerkin methods with applicatic to travelling wave problems

CHAIRMAN - T. Dupont

4.45-5.45	M.F. WHEELER	Theoretical and computational results for miscible displacement problems in a porous medium

WEDNESDAY 2 July	CHAIRMAN - L.M. Delves		
	9.15-10.00	L. COLLATZ	Comparison of finite element methods in the cubic grid with other numerical methods
	10.05-10.50	F. BREZZI	Finite dimensional approximation of simple bifurcation points
	CHAIRMAN - J.R. Whiteman		
	2.15-3.00	I. GLADWELL	An eigenfunction method for stress analysis
THURSDAY 3 July	CHAIRMAN - J.R. Whiteman		
	9.15-10.00	A. SCHATZ	Come results concerning refinements and singular functions
	10.05-10.50	W. BLACKBURN	Finite element calculations for small cracks at sharp notches in elastic/plastic materials
	11.20-12.20	B. NOBLE	Apex singularities for corner cracks in opening, sliding and tearing modes
	CHAIRMAN - B. Noble		
	4.45-5.30	W. WENDLAND	Mixed boundary value problems and finite elements for corresponding boundary integral equations
	5.45-6.30	L.M. DELVES	Iterative solution of the global element equations
FRIDAY 4 July	CHAIRMAN - A.R. Mitchell		
	9.15-10.00	P.A. RAVIART	Numerical approximation of the Navier-Stokes equations with upwinding
	10.05-10.50	G. FIX	On the structure of errors made in mixed finite element methods
	11.20-12.20	C. JOHNSON	Analysis of some finite element methods for advection-diffusion problems
	CHAIRMAN - M.F. Wheeler		
	4.45-5.30	M.J. CULLEN	Analysis of evolutionary error for finite element methods
	5.45-6.30	I. WHITE	Numerical modelling of subsidence above compacting reservoirs