

Tuesday 26 June

<i>Chair:</i>	DT: <i>GA Watson</i>	B1.36: <i>AJ Wathen</i>	T9: <i>W Hundsdoerfer</i>	T4: <i>MJ Baines</i>
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9:00–9:05	Opening Remarks			
9:05–9:50	R Fletcher A Variable Metric Method for NLP			
9:50–10:35	G Golub Ten ways to compose a tensor			

COFFEE

11:10–11:30	N Trefethen Computing matrix functions via quadrature and conformal maps	F Hulsemann Aitken-Schwarz Acceleration with auxiliary background grids	G Vanden Berghe P-stable Obrechhoff methods of arbitrary order for second-order differential...	R Welford A Finite Element Method for Immiscible Fluid Flow
11:35–11:55	N Hale New Quadrature Formulas from Conformal Maps	J V lent Robust Coarse Spaces for Domain Decomposition Methods	N Rattenbury Stiff ARK Methods	M Jensen Convergence of a RT/DG method for Miscible Displacement Problems
12:00–12:20	A Weideman The Kink Phenomenon in Fejér and Clenshaw–Curtis Quadrature	K in 't Hout Stability of ADI schemes for convection-diffusion equations with mixed derivative...	B Bhattacharya Mathematical and Numerical Modelling of Cellular Cholesterol Homeostasis	R Rankin Robust a posteriori error estimation for the nonconforming Fortin–Soulie finite...
12:25–12:45	R Pachon An invitation to the evolving CHEBFUN system	N Badshah A Fast Multigrid Algorithm for the Chan-Vese Image Segmentation Model in Variational...	N Nassif Computation of blowing-up solutions for second order differential equations...	M Parsaei Coupled method of analysis for high order approximations of linear hyperbolic...

LUNCH

<i>Chair:</i>	DT: <i>CM Elliott</i>	B1.36: <i>M Arioli</i>	T9: <i>T Linss</i>	T4: <i>G Opfer</i>
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2:00–2:45	D Arnold Piecewise polynomial differential forms and mixed finite elements			
2:50–3:10	B García–Archilla Decoupling temporal and spatial errors in posteriori error estimation for fully...	J Reid Partial Solution of Full Symmetric Indefinite Linear Systems	D Nuyens A generic software implementation of lattice sequences for numerical integration	H Qi The Nearest Correlation Matrix Problem in Finance
3:15–3:35	A Ramage Adaptive Grid Methods for Q-Tensor Theory of Liquid Crystals	J Scott The performance of a new HSL out-of-core solver	M Lindner The multi-section method: Why rectangles are sometimes better than squares.	L Stewart The use of correlated observation errors in data assimilation

TEA

4:00–4:45	P Houston hp -Adaptive Discontinuous Galerkin FEMs on Isotropic and Anisotropically Refined Meshes			
4:50–5:10	E Georgoulis Inverse-Type Estimates on hp -Finite Element Spaces and Applications	M Freitag New preconditioning strategies for eigenvalue problems	M Stephens A Numerical Scheme for a Parameterized Singularly Perturbed Differential Equation.	A Watson Fitting linear manifolds using orthogonal distances
5:15–5:35	E Cuesta A posteriori error estimates for time discretizations of fully non-linear parabolic...	V Hari Relative perturbation results for the singular values/eigenvalues of symmetrically...	N Chadha A robust r -adaptive method for a singularly perturbed 1d reaction-diffusion...	A Dax The smallest deviation from consistency
5:40–6:00	E Galligani Iterative solution of elliptic control problems with control and state constraints	H Voss A local restart procedure for iterative projection methods for nonlinear symmetric...	M Pickett A second-order overlapping Schwarz method for a 2D singularly perturbed semilinear...	J Tanner Introduction to Compressed Sensing

Wednesday 27 June

Chair:	DT: <i>R Fletcher</i>	B1.36: <i>JA Scott</i>	T9: <i>B García–Archilla</i>	T4: <i>B Fornberg</i>
9:00–9:45	S Leyffer The Return of the Filter			
9:50–10:10	N Gould Adaptive cubic over-estimation methods for unconstrained optimization	R Corless Pseudospectra of Matrix Polynomials expressed in alternative bases	P Jimack An efficient, adaptive, multigrid solver for phase field models	C Ortner Analysis of a Quasicontinuum Method
10:15–10:35	M Powell On the alternative iterations of NEWUOA	G Opfer On one linear equation in one quaternionic variable	A Mihai Adaptive Multi-Scale Optimisation for Masonry	S Islam Efficient Meshless Technique for the Solution of KdV Equation.
COFFEE				
11:10–11:30	J Hall Exploiting hyper-sparsity when computing preconditioners for conjugate gradients...	N Higham The Canonical Polar Decomposition: Theory and Computation	J Giudice Non-Newtonian Fluids and Finite Elements	M Betcke Minmax principle for magnetic stationary Schrödinger equation
11:35–11:55	C Cartis A new perspective on the complexity of interior point methods for linear programming	P Knight A fast algorithm for matrix balancing	F Z Nouri Spectral Method for an axisymmetric Stokes Problem	T Sørøvik A new radial basis set for the Schrödinger equation in spherical coordinates.
12:00–12:45	Z Strakos On unexpected consequences of numerical stability analysis of Krylov subspace methods			
LUNCH				
Chair:	DT: <i>LN Trefethen</i>	B1.36: <i>PJ Davies</i>	T9: <i>J Reid</i>	T4: <i>NIM Gould</i>
2:00–2:45	D Talay New perspectives for stochastic simulations: mathematical and numerical issues.			
2:50–3:10	D Higham Stability for Stochastic Regime-Switching	R Norton Convergence analysis of planewave expansion for band gap computations in photonic...	S Giani Convergence of adaptive FEM for elliptic eigenvalue problems	S Singer Efficient Implementation of the One–Sided Indefinite Block Jacobi Method
3:15–3:35	G Chalmers Asymptotic Stability of a Jump-SDE and its Numerical Approximation	T Betcke Particular and Fundamental Solution Methods for Scattering Problems	N Jeannequin Adaptive Unstructured High Order Nodal Finite Elements applied to the Bidomain...	S Singer Orthosymmetric Block Reflectors
TEA				
4:00–4:45	J Levesley A New Perspective on the Lattice Boltzmann Method for Simulating Fluid Flow			
4:50–5:10	W McLean A second-order accurate scheme for a fractional wave equation	T Linss A finite difference method on layer-adapted meshes for an elliptic system in...	P Tichy On Ideal and Worst-case GMRES	M Al-Baali Experience with Gradient Methods Based on Self-Scaling Quasi-Newton Updates
5:15–5:35	A M Portillo Variable step implementation of ETD methods for semilinear problems	N Schlömer Parameter uniform approximations for time-dependent reaction-diffusion problems	M Arioli GMRES preconditioned by a perturbed LDL^T decomposition with static pivoting	G Fiandaca Direct Search Methods for the Design of PSA Processes
5:40–6:00	G Prinja On Adaptive Timestepping using a Stabilised Trapezoidal Rule	R Schneider Anisotropic mesh adaptation based on a posteriori estimates and optimisation...	S H Taheri A Hybrid of the GMRES method and Electromagnetism Meta-Heuristic method for...	N Gupta Incorporating State Space Equality Constraints into Kalman Filtering Methods

Thursday 28 June

Chair:	DT: <i>J Levesley</i>	B1.36: <i>A Ramage</i>	T9: <i>DJ Higham</i>
9:00–9:45	B Fornberg Radial Basis Functions for Solving PDEs - Some Recent Developments		
9:50–10:10	N Flyer Modeling Simple Atmosperic Flows on A Sphere Using Radial Basis Functions	B Perot Higher-Order Discrete Calculus Methods.	J Wasniewski A modification of the computer software should follow the new computer hardware
10:15–10:35	C Piret The role of the shape parameter for different RBF methods when solving a convective...	L Traversoni Hypercomplex vorticity representation of fluid flow	A Taylor CONTEST: A Controllable Test Matrix Toolbox for MATLAB
COFFEE			
11:10–11:30	M Stoll Combination preconditioning and self-adjointness in non-standard inner products...	C Elliott Computational methods for surface PDEs	D Aruliah A MATLAB Tool-kit for 3D Cone Beam Computerised Tomography
11:35–11:55	A Wathen Preconditioning for self-adjointness	S Franz A new approach to recovery on discontinuous Galerkin	I Hnetynkova Analysis of the total least squares problem with multiple right-hand sides
12:00–12:45	A Kunoht Wavelet Methods for PDE-Constrained Control Problems: Optimal Preconditioners, Fast Iterative Solvers, and Adaptivity		
LUNCH			
Chair:	DT: <i>H Brunner</i>	B1.36: <i>K in'tHout</i>	T9: <i>MJD Powell</i>
2:00–2:45	D Duncan Numerical analysis of a nonlocal integro-differential equation		
2:50–3:10	P Davies Discontinuous Galerkin approximations for first kind Volterra integral equations	W Hundsdorfer IMEX linear multistep methods for stiff hyperbolic relaxation systems	J Berrut A formula for the error of finite sinc-interpolation with an even number of...
3:15–3:35	M Mokgolele High Frequency Scattering By Convex Curvilinear Polygons	P Kotzonis An iterative multi-point flux method with guaranteed positivity	O Davydov Numerical Differentiation on Scattered Centres
TEA			
4:00–4:45	V Mehrmann Numerical solution of optimal control problems for differential-algebraic systems		
4:50–5:10	M Baines Moving mesh methods for time-dependent PDEs which evolve best L_2 fits.	S Burke An Adaptive Finite Element Approximation of the Ambrosio-Tortorelli Functional	T Rees Preconditioning iterative methods for PDE constrained optimization
5:15–5:35	M Hubbard A Moving Mesh Finite Element Approach to Phase Change Problems	M Ganesh A modified least-squares FEM with quadrature for nonlinear advection-diffusion-reaction...	S Dollar Iterative solution of saddle-point systems with applications from PDE-constrained...
5:40–6:00	J Mackenzie An Unconditionally Stable Second-Order Accurate ALE-FEM Scheme for 2D Convection-Diffusion...	S Barbeiro Coupled vehicle-skin models for drug release	M Rozloznik Limiting accuracy of inexact saddle point solvers

Friday 29 June

<i>Chair:</i>	<i>DT: DB Duncan</i>	<i>B1.36: DF Griffiths</i>	<i>T9: GA Watson</i>
9:00–9:45	D Silvester Stochastic Finite Elements and Fast Iterative Solvers		
9:50–10:10	F Fairag A finite difference method on triangles	N Bozkaya The Solution of 2D Unsteady Navier-Stokes Equations using Boundary Element...	S A Yousefi Numerical solution of nonlinear ODEs and PDEs by using multiwavelet
10:15–10:35	H Fadel Numerical Modeling of Flows Subjected to Deforming Boundaries	C Bozkaya A coupled differential quadrature time integration scheme with dual reciprocity...	M Rastegari Solution of linear ODEs by a pseudo-spectral method with coefficient singularity
10:40–11:00	S Gungum DRBEM simulation of natural convection in a square cavity	Y Ordokhani An applications of hybrid of rationalized Haar functions for nonlinear mixed...	M Bulatov Multiple solutions of systems of nonlinear algebraic equations and their connection...
END OF CONFERENCE			