University of Birmingham

Dr Daniel Loghin DPhil

Lecturer

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About

School web page: **web.mat.bham.ac.uk/loghin/ (http://web.mat.bham.ac.uk/loghin/)**

Qualifications

Lecturer in Applied Mathematics

- DPhil in Mathematics, Oxford, 1999
- BSc (Hons) in Mathematics, Bristol, 199

Biography

After finishing his undergraduate studies in mathematics at the University of Bristol in 1996, Daniel Loghin went on to Oxford to carry out research in computational methods for partial differential equations as part of a 4-year DPhil programme sponsored by the EPSRC and British Energy plc. He spent a further three years in Oxford funded by an EPSRC grant to work on a research programme on fast solvers for CFD. Daniel later joined the Parallel Algorithms Group at the European Research Centre in Scientific Computing (CERFACS) in Toulouse where he continued work on a range of research themes in numerical analysis and scientific computing.

In 2006 Daniel Loghin joined the Shool of Mathematics at the University of Birmingham where he is currently Lecturer in Applied Mathematics.

Teaching

- Single Honours Mathematics (G100, G103, G141)
- Mathematics Majors: Mathematics with Business Management (G1N2); Mathematics with Engineering (J920); Mathematics with Philosphy (G1V5)
- Joint Honours Mathematics: Mathematics & Computer Science (GG14); Pure Mathematics & Computer Science (GGC4); Mathematics & Sport Science (GC17); Mathematics & Music (GW13); Mathematics & Philosophy (GV15)
- Theoretical Physics and Applied Mathematics (FG31)
- Mathematics Minors: French Studies and Mathematics (GR11); German Studies and Mathematics (GR12)
- Natural Sciences (CFG0, FCG0)

Research

RESEARCH THEMES
Numerical Analysis:

- Computational methods for partial differential equations
- Iterative methods for large systems of equations
- Domain decomposition methods
- Finite element methods

Application areas

- CFD
- Financial Engineering
- Topology optimization
- Fuel cells
- Bio-fluid modelling

Publications

Arioli, M., Loghin, D. (2009), Discrete interpolation norms with applications, SIAM J. Numer. Anal., 47(4):2924–2951.

Georgoulis, E.H., Loghin, D. (2008), Norm preconditioners for discontinuous Galerkin finite element methods, SIAM J. Sci. Comput., 30(5): 2447–2465.

Arioli, M., Loghin, D (2007), Stopping criteria for mixed finite element problems. Electron. Trans. Numer. Anal., 29:178–192.

Loghin, D., Ruiz, D., Touhami, A. (2006) Adaptive preconditioners for nonlinear systems of equations. ,J. Comput. Appl. Math. ,189(1-2): 362–374.

Arioli, M., Loghin, D., Wathen A.J. (2005), Stopping criteria in finite element problems, Numer Math., 99(3):381–410.

Loghin, D., Wathen A.J. (2004), Analysis of preconditioners for saddle-point problems, SIAM Journal on Scientific Computing, 25(6): 2029–2049.

Loghin, D., Wathen, A.J. (2003), Schur complement preconditioning for elliptic systems of partial differential equations, Numerical Linear Algebra with Applications, 10:423–443.