
Dr. Chris Cantwell

Research Associate
Department of Mathematics
Imperial College London
London SW7 2AZ
UK

<http://www.imperial.ac.uk/people/c.cantwell>

Employment

10/2009- **Research Associate, Department of Mathematics, Imperial College London**
Member of the Cardio-Mathematics group, developing numerical models of action potential propagation in myocardium to better understand the initiation and perpetuation of atrial arrhythmias.

Education

2006-2009 **Ph.D., Mathematics, University of Warwick.**
Supervisor: Prof. Dwight Barkley.

2005-2006 M.Sc., Scientific Computing, University of Warwick.
Supervisor: Prof. Dwight Barkley.
Dissertation on *Computational Linear Stability Analysis of Flow Past a Circular Cylinder.*

2001-2005 MMath, Mathematics (1st class with honours), University of Warwick, UK.
Undergraduate Research Project on *Comparison of Fast Fourier Transform Software.*

1999-2001 A-levels, Deyes High School, Maghull, UK.

Refereed Publications

C. D. Cantwell, S. J. Sherwin, R. M. Kirby and P. H. J. Kelly, *From h to p efficiently: selecting the optimal spectral/hp discretisation in three dimensions*, Math. Mod. Nat. Phenom. 2010. (submitted)

C. D. Cantwell, S. J. Sherwin, R. M. Kirby and P. H. J. Kelly, *From h to p efficiently: strategy selection for operator evaluation on hexahedral and tetrahedral elements*, Comp. and Fluids (2010), doi:10.1016/j.compfluid.2010.08.012.

C. D. Cantwell and D. Barkley, *Computational study of subcritical response in flow past a circular cylinder*, Phys. Rev. E, Phys. Rev. E 82, 026315 (2010).

C. D. Cantwell, P. E. J. Vos, S. J. Sherwin, R. M. Kirby, *From h to p efficiently: Implementation of low- and high-order spectral/hp element discretisations in two and three dimensions*, Proceedings of ECCOMAS CFD, 2010.

C. D. Cantwell, D. Barkley and H. M. Blackburn, *Transient growth analysis of flow through a sudden expansion in a circular pipe*, Phys. Fluids 22, 034101, 2010.

C. D. Cantwell, *Transient growth of separated flows*, PhD Thesis, University of Warwick, 2009.

Scholarships and Awards

- 2010 **Imperial College Trust Travel Grant**
Award (£500) to attend ECCOMAS CFD 2010 Conference, Portugal.
- 2010 **Royal Academy of Engineering International Travel Grant**
Award (£300) to attend ECCOMAS CFD 2010 Conference, Portugal.
- 2008 **Institute for Advanced Study (IAS) Award, University of Warwick, UK.**
Award (£1,000) for the organisation of a 1-day Workshop on *Computational Methods for Pricing and Hedging Exotic Options*.
- 2006-2009 **EPSRC Studentship,**
Department of Mathematics, University of Warwick.

Recent Talks

- From h to p efficiently: implementation of low- and high- order spectral/hp element discretisations in two- and three-dimensions. *ECCOMAS CFD 2010*. Lisbon, Portugal.
- Numerical study of transient growth in expanding pipe flow. *Workshop on Computational Fluid Dynamics*. University of Warwick, UK (September 2009).
- Noise-driven flow in an expanding pipe. *BAMC 2009*. University of Nottingham, UK (April 2009).
- Transient Growth of Perturbations in an Expanding Pipe. *7th Euromech Fluid Mechanics Conference*. University of Manchester, UK (September 2008).
- DimSplit++: C++ Concepts and Design. *Computational Methods for Pricing and Hedging Exotic Options (Workshop)*. University of Warwick, UK (July 2008).

Work Experience

Teaching, University of Warwick.

- 2006-2009 Course organiser for *C++ for Numerical Methods*.
- 2007-2008 Support for *Computational Linear Algebra and Optimisation*.
- 2006-2008 Teaching Assistant for *Introduction to Scientific Computing*.
- 2006-2007 Lab demonstrator for *High-performance Computing*.
- 2005-2006 Teaching Assistant for *Mathematics by Computer*.

Administration, University of Warwick.

- 2008 Organisation of a 1-day workshop on *Computational Methods for Pricing and Hedging Exotic Options*.
- 2007-2008 Co-Organizer of the *CSC PhD Numerical Seminar Series*. Weekly meetings for PhD students.
- 2007-2008 Operate the Taught Course Centre Access Grid Node, Department of Mathematics, University of Warwick.

Computer Skills

Languages: C++, BASH, PERL, L^AT_EX, Java, HTML, Fortran

Applications: MATLAB, Microsoft Office

Operating Systems: Linux, UNIX, Microsoft Windows 98/2000/XP/Vista