Malcolm Roberts: List of Publications

Publications In Progress

Comparison the Discontinuous Galerkin and Semi-Lagrangian Methods for Simulations of the Vlasov Equation
With Philippe Helluy et al.

Detection of Periods and Sationarity in Agent-Based Models
With Frederik Schaff and Anna Klabunde

Structures in spinup of helicaly forced MHD Turbulence
With Matthieu Leroy and Kai Schneider

Implicitly Padded Convolutions and Correlations on Real Data

Parallel Implementation of Implicitly Padded Convolutions
With John C. Bowman.

Renormalisation Limits of Shell Models of Turbulence
With John C. Bowman and Bruno Eckhardt.

Submitted

Asynchronous OpenCL/MPI numerical simulations of conservation laws, with Philippe Helluy, Thomas Strub, Michel Massaro. Submitted to IWOCL (2015).

Lagrangian/Eulerian Solvers and Simulations for Vlasov, with Sebastien Guisset, Philippe Helluy, Michel Massaro, Laurent Navoret, and Nhung Pham. Submitted to ESAIM Proceedings and Surveys (2015).

Peer-Reviewed Articles

Self-organisation of helicaly forced MHD flows in confined cylindrical geometries, with M. Leroy, J. Morales, W. Bos, and K. Schneider. Submitted to Fluid Dynamics Research, (2014) in press.

Adaptive Matrix Transpose Algorithms for Distributed Multicore Processors, with John C. Bowman. Submitted to Springer Proceedings of the Applied Mathematics, Modelling and Computational Science, (2013).

Multithreaded Implicitly Dealiased Pseudospectral Convolutions, with John C. Bowman. Proceedings of the 20th Annual Conference of the CFD Society of Canada (2012)

Pseudospectral Reduction of Incompressible Two-Dimensional Turbulence, with John C. Bowman. Communications in Nonlinear Science and Numerical Simulation **17:5**, 2008-2013 (2012)

Dealiased Convolutions for Pseudospectral Simulations, with John C. Bowman. Proceedings of the 13th European Turbulence Conference (2011)

Efficient Dealiased Convolutions without Padding, with John C. Bowman. SIAM Journal on Scientific Computing, **33:1**, 386-406 (2011)

Links between dissipation, intermittency, and helicity in the GOY model revisited, with John C. Bowman, Charles R. Doering, Bruno Eckhardt, Jahanshah Davoudi, and Jörg Schumacher. Physica D **218**, 1-10 (2006)

Dissertations

Multispectral Reduction of Two-Dimensional Turbulence, PhD Thesis, University of Alberta (2011)

A Multi-Spectral Decimation Scheme for Turbulence Simulations, M. Roberts, Masters Thesis, University of Alberta (2006)

Conference Proceedings

Dealiased convolutions for pseudospectral simulations, with John C. Bowman, Proceedings of the 13th EUROMECH European Turbulence Conference, Journal of Physics: Conference Series **318** 072037 (2011)

Report on the Math-Stat Graduate Education Round table (2010)

The Multispectral Method: Progress and Prospects, with John C. Bowman, and Bruno Eckhardt, Advances in Turbulence XII, Proceedings of the 12th EUROMECH European Turbulence Conference 2009, Marburg, Springer Proceedings in Physics (2009)

General Statistical Design of an Experimental Problem for Harmonics, with Bill Mawby, Sean Bohum, Peter Gibson, Michael Lamoureux, et al. Proceedings of the Eighth PIMS-MITACS Industrial Problem Solving Workshop (2004)

Modelling the temperature distribution in concrete structures, with Tim Myers et al. Proceedings of the 7th PIMS-MITACS Graduate Math Modelling Camp, (2004)

Other Publications

Lab Manual for Math 201: Differential Equations for Engineers, with S. Marion (2011)

`FFTW++`: *Fast Fourier Transform C++ Header Class for FFTW3*, with John C. Bowman. `fftwpp.sourceforge.net`, (2010)