

Project Acronym: RTN
Project ID: 505226
Project Participant: Mathematical Institute, University of Oxford

Personal Information

Name: Benson Muite
Nationality: Kenyan
Previous place of work: Nairobi, Kenya
Previous place of education: Princeton University, New Jersey, USA

Network Information

Start date: 1 October 2004
Duration: 3 years
Category: ESR
Place: Oxford
Country: UK

Research Summary

The Multimaterial research network has been very helpful in providing opportunities to learn about and solve interesting physical and mathematical questions. Research in collaboration with the teams in Antwerp and Chatillon has been fruitful, and we are in the final stages of preparing papers based on this work. Visits to Prague and Bonn have lead to good contacts with the members of these groups and while they have not lead to work in which I am directly involved, have lead to other collaborations between the group at Oxford and people at these two institutions. I have particularly enjoyed the multidisciplinary nature of the network and the opportunity to use some of the largest computers in the world in my research.

Conference presentations

B. Muite, "Viscoelastic dynamics for a scalar two-dimensional continuum model for microstructure formation at an austenite-martensite interface", Fourth MULTIMAT meeting, Cambridge, UK, March 2006

B. Muite, "Viscoelastic Dynamics for a Scalar Two Dimensional Continuum Model for Microstructure creation at an Austenite-Martensite Interface", SIAM Annual meeting, Boston, USA, July 2006 (poster)

B. Muite, W. Tirry, D. Schryvers, "Determining near compatibility in martensitic phase transformations", Sixth MULTIMAT meeting, Prague, Czech Republic, April 2007

B. Muite, O. Salman, "Comparisons of a geometrically linear and a geometrically nonlinear viscoelastic 2D vectorial model for martensitic pattern formation" Seventh MULTIMAT meeting, Oxford, UK, September 2007 (poster)

B. Muite, "Computations of models for martensitic transformations", Contemporary Topics in Nonlinear PDES, Pittsburgh, Pennsylvania, USA, June 2008

B. Muite, U. Salman "A numerical comparison of geometrically linear and nonlinear elasticity models for the square to rectangle phase transformation", ICOMAT 2008, Santa Fe, New Mexico, USA, July 2008

B. Muite, U. Salman "Dynamic simulations of continuum models for martensitic phase transformations" Eighth MULTIMAT, Rome, Italy, April 2008

R. de la Cruz, B. Muite, H. Servat, "Strong linear scaling for spectral simulations of time dependent semilinear partial differential equations on Marenostrom", World Congress on Computational Mechanics, Venice, Italy, July 2008

B. Muite, "Large scale spectral computations of phase transformations", SIMUMAT summer school, Castro Urdiales, Cantabria, Spain, July 2008

Conference and summer school participation

October 2004: MULTIMAT Kick-off meeting, MPI, Leipzig, Germany

December 2004: Multiscale computations meeting, University of Sussex, Brighton, England

March 2005: Second MULTIMAT meeting, EP, Paris, France

July 2005: Mathematical statistical physics summer school, Les Houches, France

September 2005: Third MULTIMAT meeting, Barcelona, Spain

March 2006: Fourth MULTIMAT meeting, Cambridge, Oxford

April 2006: Multi-scale workshop, Warwick, UK

June 2006: BICS Summer School: Modelling across scales, Bath, UK

July 2006: SIAM annual meeting, Boston, USA

September 2006: ESOMAT Bochum, Germany

November 2006: Midterm MULTIMAT meeting, Antwerp, Belgium

April 2007: Sixth MULTIMAT meeting, Prague, Czech Republic

June 2007: Manchester computing parallel programming summer school, Manchester, UK

September 2007: Seventh MULTIMAT meeting, Oxford, UK

April 2008: Eighth MULTIMAT meeting, Rome, Italy

June 2008: Contemporary topics in nonlinear partial differential equations, Pittsburgh, Pennsylvania, USA

June 2008: Workshop on Geometric analysis, elasticity and PDE on the 60th birthday of John Ball, Edinburgh, UK

July 2008: World congress on computational mechanics, Venice, Italy

July 2008: Mathematical analysis in fluids and its simulation, Castro Urdiales, Cantabria, Spain

August 2008: PRACE petascale summer school, Stockholm, Sweden

September 2008: Closing MULTIMAT meeting, Bonn, Germany

Research Visits

May 2006 Hanus Seiner, Michel Landa, Prague, Czech Republic

May 2006 W. Kress, W. Hackbusch, Leipzig, Germany

August 2006 W. Tirry, D. Schryvers, Antwerp, Belgium

December 2006 U. Salman, A. Finel, Paris, France

June 2007 Antonio Capella, Bonn, Germany

November 2007, Mariano Vazquez, Barcelona Supercomputing Center, Spain

March 2008 U. Salman, A. Finel, Paris, France