Curriculum Vitae

Miguel Angel Moyers González

Address and Personal Details

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Gender: Male
Date of birth: September 22, 1976
Place of birth: México City, México
Present Citizenship: Mexican
Status in the UK: Work permit

Employment

09/2007–present	Lecturer in Applied Mathematics. Department of Mathematical Sciences. University of Durham.
01/2006–09/2007	Postdoctoral fellow at Centre de Recherches Mathématiques (CRM), Université de Montréal. Supervisor: R.G. Owens.

Education

01/1995–06/2000	B.Sc. in Applied Mathematics at ITAM, (Instituto Tecnológico Autónomo de México), México City, Mexico.
09/2000–08/2002	M.Sc. in Mathematics at UBC, (University of British Columbia), Vancouver, Canada Thesis: *Nonlinearly Stable Multi-layer Viscoplastic Flows*. Supervisor: I. Frigaard.
09/2002–12/2005	Ph.D. in Mathematics at UBC (University of British Columbia), Vancouver, Canada. Thesis: *Transient Effects in Oilfield Cementing Flows*. Supervisor: I. Frigaard

Awards and Scholarships

09/2000–06/2003	International Postgraduate Scholarship from CONACYT (Consejo Nacional para la Ciencia y Tecnología), Mexican Government.
07/2003–12/2005	Research assistantship: NSERC & Schlumberger Oilfield Services, held at department of Mathematics UBC.
2005	The 2005 CAIMS Cecil Graham Doctoral Dissertation Award.
01/2006	CRM postdoctoral fellowship.

Teaching Experience

05/2000–08/2000	Instructor: Algebra for Engineers, (ITAM). Course taught Algebra II
09/2002–09/2003	Tutorial Centre tutor for Differential Equations & Numerical Analysis, (UBC).
09/2003–05/2005	Instructor: Differential and Integral Calculus (UBC). Courses taught: MATH 184, MATH 105.
09/2007–06/2008	Lecturer in the Department of Mathematical Science, Univeristy of Durham. Courses taught: Tutor for 2nd year Honours Numerical Analysis (both terms). Lecturer for 1st year Honours Data Analysis and Modelling Simulation (second term). Lecturer for 2nd year Honours Numerical Analysis for Engineering (second term).

Research Interests

Non-Newtonian Fluid Mechanics.

Hydrodynamic Stability of Complex Fluids.

Industrial Mathematics.

Hemodynamics (modelling and computation).

Partial Differential Equations: numerical and theoretical approaches.

Papers Published and in Progress

[1] M. Moyers-Gonzalez, I. A. Frigaard & C. Nouar, *Nonlinear stability of a visco-plastically lubricated shear flow.* Journal of Fluid Mechanics, vol. 506, pp. 117-146, (2004).

[2] M. Moyers-Gonzalez and I. A. Frigaard, *Numerical solution of duct flows of multiple visco-plastic fluids.* Journal of Non-Newtonian Fluid Mechanics, vol. 122, pp. 227-241, (2004).

[3] M. Moyers-Gonzalez, I. A. Frigaard, O. Scherzer & T.-P. Tsai, *Transient Effects in Oilfield Cementing Flows, part 1: qualitative behaviour*, European Journal Applied Mathematics, vol. 18, pp. 477-512 Part 4 (2007) .

[4] M. Moyers-Gonzalez and I. A. Frigaard, *Kinematic instabilities in two-layer eccentric annular flows, part 1: Newtonian fluids*, Journal of Engineering Mathematics, accepted, available online.

[5] M. Moyers-Gonzalez and I. A. Frigaard, *Kinematic instabilities in two-layer eccentric annular flows, part 2: shear-thinning and yield stress effects*, submitted to Journal of Engineering Mathematics, under review.

[6] M. Moyers-Gonzalez and R. G. Owens, *A non-homogeneous constitutive model for human blood. Part I: model derivation and steady flow*, submitted to Journal of Fluid Mechanics, under review.

[7] M. Moyers-Gonzalez and R. G. Owens, *A non-homogeneous constitutive model for human blood. Part II: asymptotic solution for large Péclet numbers*, submitted to Journal of Non-Newtonian Fluids Mechanics, accepted for publication.

[8] M. Moyers-Gonzalez and R. G. Owens, *A non-homogeneous constitutive model for human blood. Part III: oscillatory flow*, submitted to Journal of Non-Newtonian Fluids Mechanics, accepted for publication.

[9] M. Moyers-Gonzalez and R. G. Owens, *Fractional step methods for time dependent blood flow.* (in progress)

[10] M. Moyers-Gonzalez, I.A. Frigaard and R. G. Owens, *Stability of plane Couette-Poiseuille flow of a visco-elastic fluid.* (in progress)

[**11**] M. Moyers-Gonzalez and R. G. Owens, *Reproducing Fahraeus and Fahraeus-Lindqvist effects with a non-homogeneous constitutive model for human blood.* (in progress)

[**12**] M. Moyers-Gonzalez, *Stability of Poiseuille flow of an elastoviscoplastic fluid.* (in progress)

Conferences, Presentations and Seminars

06/2002	**M. Moyers-Gonzalez** and I.A. Frigaard, Nonlinearly Stable Multi-layer Viscoplastic Flows, CAIMS annual conference, Calgary, June 2002.
06/2003	**M. Moyers-Gonzalez** and I.A. Frigaard, Numerical solution of duct flows of multiple viscoplastic fluids, XIIIth International Workshop on Numerical Methods for non-Newtonian flows, Lausanne, Switzerland, June 4-7, 2003.
11/2004	**M. Moyers-Gonzalez** and I.A. Frigaard, Unstable displacements in oil well cementing, Complex Fluids Seminar, UBC, November 2004.
01/2005	**M. Moyers-Gonzalez** and I.A. Frigaard, Unsteady Displacement Flows in a Model for Oilfield Cementing, SIAM Seminar, University of Washington, January 2005.
04/2005	**M. Moyers-Gonzalez**, I.A. Frigaard, O. Scherzer and T.-P. Tsai, Unsteady Displacement Flows in a Model for Oilfield Cementing: Theory and Applications, Department of Computer Science, University of Innsbruck, Austria, April 19, 2005.
04/2005	**M. Moyers-Gonzalez** and I.A. Frigaard, Interfacial instabilities in primary cementing displacements flows, 2nd Annual European Rheology Conference, Grenoble, France, April 21-23, 2005. Poster presentation.
10/2005	**M. Moyers-Gonzalez** and I.A. Frigaard, Interfacial instabilities in primary cementing displacements flows, 77th Annual Meeting of the Society of Rheology, Vancouver, Canada, October 16-20, 2005. Poster presentation.
09/2002-10/2005	Various industrial sponsor presentations to Schlumberger, at UBC and at Clamart, France.
06/2006	**M. Moyers-Gonzalez**, Transient Effects in Oilfield Cementing Flows, CAIMS-MITACS 2006 Joint Annual Conference, Toronto, Canada, June 16-20, 2006. Cecil Graham Doctoral Dissertation Award presentation.
06/2006	**M. Moyers-Gonzalez** and R.G. Owens, A new microstructure-based constitutive model for human blood: homogenous and non-homogenous flows, CAIMS-MITACS 2006 Joint Annual Conference, Toronto, Canada, June 16-20, 2006. Poster presentation.
10/2006	**M. Moyers-Gonzalez** and R.G. Owens, A new microstructure-based constitutive model for human blood: homogenous and non-homogenous flows, 78th Annual Meeting of the Society of Rheology, Portland ME, USA, October 8-12, 2006.
10/2006	**M. Moyers-Gonzalez** and R.G. Owens, A new microstructure-based constitutive model for human blood: homogenous and non-homogenous flows, CRM Applied Mathematics Seminars, Montreal, Canada, October 30, 2006.
03/2007	**M. Moyers-Gonzalez**, R.G. Owens and J. Fang, On the flow of human blood in a tube, The Fourth Montreal Scientific Computing Days, UdeM, Montreal, Canada, March 2007.
05/2007	**M. Moyers-Gonzalez** and R.G. Owens , Modelling and numerical simulation of blood flow part 2: Non-homogeneous tube flow, CAIMS annual meeting 2007, Banff, Canada, May 2007.
05/2007	**M. Moyers-Gonzalez** and I.A. Frigaard, Kinematic instabilities in primary cementing of oil and gas wells, Viscoplasticity: from theory to application workshop, Monte Verità, Switzerland, October 2007.

02/2008	**M. Moyers-Gonzalez**, and R.G. Owens, A non-homogeneous constitutive model for human blood: flow in small vessels, Cardiff University, UK, February 2008.
03/2008	**M. Moyers-Gonzalez**, and R.G. Owens, A non-homogeneous constitutive model for human blood: flow in small vessels, University of Strathclyde, UK, March 2008.

Workshops and Other Activities

05/2002	PIMS-MITACS Industrial Problem Solving Workshop, UBC.
07/2002	Fluid Mechanics Summer School, University of Alberta.
06/2003	Research visit at LEMTA, Nancy, France. Host: C. Nouar.
05/2004	Shape Optimization Workshop, University of Ottawa.
05/2004	PIMS-MITACS Industrial Problem Solving Workshop, UBC.
04/2005	Inverse Problems Workshop , Obergurgl, Austria.
04/2005	Research visit at University of Innsbruck, Innsbruck, Austria. Host: O. Scherzer.
02/2006	Attendance to The Third Montreal Scientific Computing Days, UdeM.
08/2006	Research visit at University of British Columbia, Vancouver, Canada. Host: I.A. Frigaard.
09/2006–12/2006	Organizer of the CRM Applied Math seminar at UdeM.
03/2007	Attendance to The Fourth Montreal Scientific Computing Days, UdeM.
10/2007	Viscoplasticity: from theory to application workshop, Monte Verità, Switzerland.

Computational Skills

Programming languages: C/C++.

Programs: Maple, Matlab, Latex.

Operating Systems: MSDOS, UNIX, LINUX.

Language Knowledge

Fluent in English and Spanish

Basic French

References

Dr. Ian Frigaard
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