

**Dr. Nasreddine MEGREZ**  
Ph.D. Applied Mathematics, PM. Finance

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## **EXPERTISE AND RESEARCH INTERESTS**

- Mathematical Finance and Financial Engineering, Mathematical Economics
- Dynamic Computable General Equilibrium Modeling
- Bioinformatics
- Multivariate Statistical Analysis, Multivariate Feature Selection, Pattern Classification
- PDE, Variational and Nonvariational techniques, Bifurcation
- Magnetic Resonance Imaging: RF pulses design, Wavelet encoding
- Geological 3D modeling
- Interferometric synthetic aperture radar data processing for soil consolidation theory and oil reservoir modelling

## **EDUCATION**

**PM Professional Master in Finance, 2011 - 2012**  
University of Quebec in Outaouais, **Canada.**

**Qualification for the Rank of Associate Professor** (Maitre de Conférence), 2005  
Section 26: Applied Mathematics  
Ministry of Higher Education and Scientific Research, **France**

**Ph.D** Applied Mathematics, December 17<sup>th</sup>, 2003  
University of Toulouse, **France**  
Title: On some elliptic and sub-elliptic nonlinear problems on unbounded domains.  
Awarded: Très Honorable (Equivalent to Highest Distinction)  
Speciality: Partial Differential Equations, Nonlinear Analysis

**MSc** Applied Mathematics, 1999  
Paul Sabatier University, Toulouse, **France**

## PROFESSIONAL RECORD

- 2014-Present      **Chairman of the Department of Mathematics and Computer Science**  
Alfaisal University, Riyadh, Saudi Arabia
- 2013 - 2014      **Assistant Professor of Mathematics**  
Department of Mathematics  
Prince Sultan University, Riyadh, Saudi Arabia
- 2012 - 2013      **Assistant Professor and Math Courses Manager**  
Saudi Electronic University, Riyadh, Saudi Arabia
- 2011 - 2012      **Associate Researcher**  
Department of Administrative Sciences  
University of Quebec in Outaouais, Gatineau, **Canada**  
**Research Subjects:** - Financial Risk Analysis, Real options  
- Financial Econometrics
- Sep.2010 - Jan 2011      **Associate Researcher**  
Department of Chemical and Material Engineering  
University of Alberta, **Canada**  
**Research Subjects:** - System Identification and Control  
- Metabolomics Data Analysis
- 2008 - 2010      **Contract Assistant Professor of Mathematics and Statistics**  
University of Alberta, **Canada**  
**Taught Courses:** Statistics (STAT 151), Calculus (MATH 113),  
Differential Equations (MATH 201), Discrete Mathematics (MATH 222)
- 2007 - 2008      **NSERC Postdoctoral Fellow**  
Natural Resources Canada - Geological Survey of Canada, Ottawa, **Canada**  
Team: Geoscience Integration and Analysis Section
- 2006 - 2007      **NSERC Postdoctoral Fellow**  
National Research Council of Canada  
Institute for Biodiagnostics, Winnipeg, **Canada**  
Team: MR Research and Development
- 2004 - 2005      **Visiting Researcher** at CERFACS: [www.cerfacs.fr](http://www.cerfacs.fr)  
Team: Parallel Algorithms
- 2002 - 2004      **Assistant Professor**, Toulouse1 University, **France**  
Lectures for the second year of undergraduates in Linear Algebra, Differential  
Equations, and Optimization
- 1999 - 2001      **Instructor**, Toulouse1 University, **France**  
Lectures for the second year of undergraduates in Linear Algebra, Differential  
Equations, and Optimization  
Lectures for the first year of undergraduates in Linear Algebra, Analysis,

**COMMITTEES & SERVICE:**

- Chairman of the Curriculum Committee, College of Science, Alfaisal University
- Chairman of the Hiring Committee, Department of Mathematics & Computer Science, Alfaisal University
- Member of Quality Assurance and Accreditation Committee, College of Science, Alfaisal University
- Member of Research and Faculty Development Committee, College of Science, Alfaisal University
- Member of Scheduling Committee, College of Science, Alfaisal University
- Member of the University Disciplinary Committee, Alfaisal University
- College of Science liaison to the Library, Alfaisal University

**PUBLICATIONS**

1. N. Megrez, *On a more complete version of the Green Solow Model*. Submitted.
2. N. Megrez, *On a critical and subcritical system of subelliptic equations on unbounded domain of Heisenberg group*. **American Journal of Mathematics and Sciences**, Vol. 3, No 1, (January 2014), 115-130
3. B. Khaldi, N. Megrez, *On a singular class of strongly indefinite Hamiltonian systems involving critical growth on a bounded set of  $\mathbb{R}^2$* . **American Journal of Mathematics and Sciences** , Vol. 3, No 1 ,(January 2014), 95-114
4. N. Megrez, B. Khaldi, *Existence and nonexistence results for a class of Hamiltonian elliptic systems with weights*. **International Journal of Applied Mathematics**. Volume 26 No. 3, 2013, 333-347 (**2013**)
5. N. Megrez, K. Sreenadh, B. Khaldi, *Multiplicity of positive solutions for an elliptic gradient system with exponential nonlinearity*. **Electronic Journal of Differential Equations**, Vol. 2012, No. 236, pp. 1-16. (**2012**)
6. B. Khaldi, N. Megrez, *Multiple positive solutions for a Hamiltonian system with an indefinite data function*. **Complex Variables and Elliptic Equations**, (**2011**), 1-15
7. R. Young, N. Megrez, and H. Serrai, *Wavelet Encoding MRSI method provides results comparable to CSI while reducing acquisition time and pixel bleed*. Research Abstract, **2006**
8. M. Ahmadnasab, F. Chaitin-Chatelin, N. Megrez, *Homotopic Deviation in the light of Algebra*. **CERFACS Technical Report**, TR/PA/05/05 (**2005**)
9. N. Megrez, J. Giacomoni, *On an indefinite semilinear elliptic problem on  $\mathbb{R}^N$* , **J. Math. Anal. Appl.**, 297 (**2004**), 212-233
10. N. Megrez, *On a Critical Hamiltonian System on  $\mathbb{R}^N$* . **Monog. del Sem. Mat. Garcia de Galdeano**, 27 (**2003**), 421-427
11. N. Megrez, *A nonlinear elliptic eigenvalue problem on an unbounded domain*. **Rostock. Math. Kolloq.**, 56 (**2002**), 39-48
12. N. Megrez, *Étude de certains problèmes elliptiques et sous elliptiques non-linéaires sur des domaines non bornés*. **Ph.D Thesis**, Toulouse1 University, France, (2003)

13. C. J. Batkam, F. Colin, N. Megrez, and B. Khaldi, *Multiple solutions for a Schrödinger equation with periodic potential and critical growth in  $\mathbb{R}^2$* . In Preparation
14. N. Megrez, B. Khaldi, *Multiple positive solutions for a singular elliptic system*. In Preparation

### **FELLOWSHIPS, AWARDS**

- NSERC Postdoctoral Fellowship, NRCan-GSC, Ottawa, Canada 2007-2008
- NSERC Postdoctoral Fellowship, NRC-IBD, Winnipeg, Canada 2006-2007
- Postgraduate (MSc and Ph.D) Fellowship, Algerian and French Governments 1998-2002

### **OTHER TRAININGS**

- Gocad Training, Mira Geoscience, Montreal, June 2007
- Training in computer science specializing in: Data Bases, Programming of Software, Systems and Networks, 2001-2002
- CNAM: (Conservatoire National des Arts et des Métiers), Toulouse, France

### **PROGRAMMING AND COMPUTER SKILLS**

EViews, GRETL, Excel, MATLAB, C++, Python, Linux, Windows

### **LANGUAGES**

English (Fluent), French (Fluent), Arabic (Fluent)