**Khouzeima Moutanabbir, Ph.D.** **Curriculum vitae**

CONTACT INFORMATION

Assistant Professor
Department of Mathematics and Actuarial Science
The American University in Cairo
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New Cairo 11835, Egypt

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APPLICATION AREAS AND INTERESTS

Actuarial Modeling, financial modeling, stochastic modeling applied in finance and insurance, risk management, asset liability management, risk measures and solvency, risk allocation, capital allocation, asset allocation, dependence modeling and copula theory, risk theory and ruin theory, equity-linked annuities pricing, economic and financial scenario generators, investment models and actuarial applications, pension fund risk management.

CITIZENSHIP

Morocco

EDUCATION

**École d'actuariat, Université Laval**,
Québec, Canada.

Ph.D., Actuarial science, January 2013

- Thesis Topic: Risk Evaluation and Risk Allocation using Advanced Actuarial Models.
- Advisor: Pr. Etienne Marceau
- Co-advisors: Pr. Hélène Cossette and Dr. Patrice Gaillardetz
- Area of Study: Risk management in finance and actuarial science.

**Institut National de Statistique et d'Économie Appliquée**,
Rabat, Morocco.

M.S. Diplôme d'ingénieur d'État, Actuarial Science and Finance, July 2006

- Thesis Topic: Embedded Options and Bank Asset-Liability Management.
- Area of Study: Financial Risk Management.

**Preparatory Classes to Grandes Ecoles d'Ingénieurs**,
Marrakesh, Morocco.

Major in Mathematics and Physics, June 2003

- $M^{\star}$, first class honors

PROFESSIONAL EXPERIENCE

**Department of Mathematics and Actuarial Science, The American University in Cairo**, Cairo, Egypt.

Assistant Professor — **July 2013 to present**

**Department of Statistics and Actuarial Science, University of Waterloo**, Ontario, Canada.

Postdoctoral Fellow — **July 2012 to July 2013**

- Host: Dr. David Landriault

**École d'actuariat, Université Laval**,
Québec, Canada.

Part-time lecturer — **September 2008 to June 2012**

**École d'actuariat, Université Laval**,
Québec, Canada.

Research assistant — **January 2008 to June 2012**

- Member of laboratoire de recherche ACT&RISK, modélisation et quantification des risques en actuariat. École d'actuariat, Université Laval.
- Supervise undergraduate and graduate students in their work and training.

**Asset Allocation Department, AON Consulting**,
Montreal, Canada.

Research consultant and analyst — **October 2008 to September 2010**

- Collaborate with AON-Montreal and AON-London R&D teams to develop an economic scenario generator for asset allocation and asset liability management.
- Provide technical assists to AON analyst and consultant in Matlab and VBA programming.
- Support AON-Montreal analyst team as research consultant in financial and actuarial modeling.

**Economics and International Relations Department**,
**Bank Al-Maghrib, Central Bank of the Kingdom of Morocco**,
Rabat, Morocco.

Statistician — **August 2006 to September 2007**

- Produce monetary and financial statistics.
- Participate in the bank's monetary and financial statistics reform and the new bank's data-base project.
- Provide support in computer programming.

## Teaching Experience

- Loss models;
- Risk theory;
- Life contingencies;
- Mathematics of derivatives pricing;
- Stochastic processes;
- Calculus.

## Publications

[1] Hélène Cossette, Côté Marie-Pier, Etienne Marceau, **Khouzeima Moutanabbir**. Multivariate Distribution defined with Farlie-Gumbel-Morgenstern Copula and mixed Erlang Marginals: Aggregation and Capital Allocation. Insurance: Mathematics and Economics, Volume 52, Issue 2, May 2013.

[2] Hélène Cossette, David Landriault, Etienne Marceau, **Khouzeima Moutanabbir**. Analysis of the discounted sum of ascending ladder heights. Insurance: Mathematics and Economics, Volume 51, Issue 2, September 2012.

[3] Cossette, H., Gaillardetz, P., Marceau, E., **Moutanabbir, K.**. A stochastic international investment model and risk allocation. (Submitted)

[4] Cossette, H., Landriault, D., Marceau, E., **Moutanabbir, K.**(2013). Moment-based approximations with finite mixtures of Erlang of common scale.(To be submitted)

[5] Landriault, D., **Moutanabbir, K.**(2013). Multivariate Distribution using the Bernstein Copula and Risk Aggregation.(In progress)

## Other publications

- **Khouzeima Moutanabbir**(2013). Évaluation et allocation du risque dans le cadre de modèles avancés en actuariat. Thèse de doctorat, Université Laval, Québec, Canada.
- **Moutanabbir, K** (2006). 'Modélisation des options cachées en gestion actif-passif bancaire: option de liquidité et option des remboursements anticipés'. Projet de fin d'Étude à l'Institut National de Statistique et d'Économie Appliquée, Rabat, Maroc.
- **Moutanabbir, K** (2005). 'Modèle de credit-scoring pour un portefeuille de prêts de consommation'. Projet de stage d'application à l'Institut National de Statistique et d'Économie Appliquée, Rabat, Maroc.

## Invited Talks

- Seminar of the department of mathematics and actuarial science, Introduction to R with applications in actuarial science, November 2013.
- 2nd Québec-Ontario Workshop on Insurance Mathematics, asset-liability management for pension fund using an international investment model, Toronto, Canada, February 2012.
- Séminaire de l'École d'actuariat à l'Université Laval, générateur de scénarios et applications en gestion du risque, Québec, Canada, December 2011.
- 1st Graduate Students Workshop on Actuarial and Financial Mathematics, an international investment model: the accumulation value analysis and asset allocation problem under Inflation, Québec, Canada, December 2010.
- Séminaire sur les Statistiques Monétaires et Financières organisé par la Banque Africaine de Développement en collaboration avec le Fond Monétaire International et la Banque Mondiale, traitement des provisions techniques des compagnies d'assurance en statistiques monétaires des banques centrales, Tunis, Tunisie, May 2007.

## Contributed Talks

- 46th Actuarial Research Conference, capital assessment and ruin theory, Connecticut, August 2011 (Poster).
- La Journée de Recherche en Science et Génie à l'Université Laval, génération des scénarios et allocation d'actif à l'aide d'un modèle d'investissement, Québec, Canada, March 2011 (Poster).
- 14th International Congress on Insurance: Mathematics and Economics, international investment model under inflation risk, Toronto, Canada, June 2010.
- La Journée de Recherche en Science et Génie à l'Université Laval, estimation d'un modèle d'investissement, Québec, Canada, March 2010 (Poster).
- 44th Actuarial Research Conference, estimation of an international investment model, Madison, Wisconsin, August 2009.

## EVENTS ATTENDED

- Statistical Science in Society Conference, Waterloo, Canada, July-August 2013.
- A celebration of Hans Gerber's contributions, Waterloo, Canada, June 2013.
- 1st Québec-Ontario Workshop on Insurance Mathematics, Montreal, Canada, January 2011.
- 38th Annual Meeting of the Statistical Society of Canada, Québec, Canada, May 2010.
- La Journée des Copules à l'Université Laval, Québec, Canada, May 2008.
- High-Level Regional Seminar on Inflation Targeting organized jointly by the International Monetary Fund's Monetary and Capital Markets Department, and Morocco's Central Bank, Bank Al-Maghrib, April 2007.

## HONORS AND AWARDS

Member of laboratoire de recherche ACT&RISK, Modélisation et quantification des risques en actuariat. École d'actuariat, université Laval. (2011)

Committee on Knowledge Extension Research (C.K.E.R.): Travel Grant for the 46th Actuarial Research Conference.(2011)

Admission scholarship for Ph.D. student at Université Laval. (2007)

Admission scholarship from the Chaire d'actuariat de l'Universié Laval for Ph.D. student in Actuarial Science at Université Laval.2007)

Fellow of Association Marocaine des Actuaires.(2006)

Graduation with honors from Institut National de Statistique et d'Économie Appliquée Rabat, Morocco.(2006)

Honors Class in Preparatory Classes to Grandes Ecoles d'Ingénieurs, Marrakesh, Morocco.(2002).

Baccalauréat en Sciences Mathématiques Mention Bien (Magna cum Laude).(2001)

## PROFESSIONAL EXAM

Society of Actuaries Exams (In progress)
- MLC-Models for Life Contingencies exam.
- Exam P-Probability.

## SOFTWARE SKILLS

Matlab, R, SPSS, Eviews, Maple, Visual Basic, C++, SAS, Mathematica, Stata and SQL.

## EXPERTISE

Monte Carlo simulation, R, VBA, matlab, actuarial modeling, financial modeling, statistical modeling, quantitative finance,time series analysis, econometrics, mathematics, statistics, risk management, derivatives, market risk,credit risk, operational risk, capital allocation, risk measures, optimization, quantitative analysis, economics.

## REFERENCES

Available upon request.

## LANGUAGES

- arabic/french: mother tongue.
- English.