# Arnaud Dufays

Ph.D in Economics and Management Science

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## Contact

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## Key information

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| **Interests** | Econometrics, Finance, Bayesian inference |
| **Languages** | French (Native), English (Good), Dutch (Scholar) |
| **It abilities** | Matlab, C++, Java, Latex, Excel, OxMetrics, Stata, QuarkXpress |
| **Site** | https://sites.google.com/site/websiteofarnauddufays/ |

## Professional and Educational background

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| 2015 | Assistant professor at Université Laval |
| 2014–2015 | Post-doc. at Université Catholique de Louvain |
| 2013–2014 | Post-doc. at Centre de Recherche en Economie et Statistique (CREST) |
| Jul-Nov 2013 | Internship at the National Bank of Belgium |
| 2009–2013 | Ph.D candidate in Economics (Université Catholique de Louvain) |
| 2008–2009 | Research master [120-ECTS] in Economics (passed with 'Grande Distinction') |
| 2003–2008 | Civil Engineering in applied mathematics (UCL) - (passed with 'Distinction') |

## Thesis information

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| **Title** | **Modeling structural changes in volatility.** |
| **Committee** | Luc Bauwens (Université Catholique de Louvain) |
| | Sébastien Van Bellegem (Université Catholique de Louvain) |
| | Jeroen Rombouts (ESSEC Business School) |
| | Herman K. Van Dijk (Erasmus University Rotterdam) |
| | Yukai Yang (Université Catholique de Louvain) |

## Refeering activities

Journal of Econometrics, Journal of Empirical Finance, International Journal of Forecasting, Journal of Banking and Finance, Computational Statistics and Data Analysis (CSDA), Statistical Inference for Stochastic Processes, Société Française de Statistique.

## Visiting

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| May-Aug 2012 | **HEC Montréal** under the supervision of Jeroen Rombouts. |

## Conferences

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| Nov 2014 | European Seminar on Bayesian Econometrics (ESOBE), **Paris**. |
| Jun 2014 | Conference of the International Association for Applied Econometrics (IAAE), **London**. |
| Dec 2013 | 6th international conference of the ERCIM Computing and Statistics, **London**. |
| Dec 2012 | 5th international conference of the ERCIM Computing and Statistics, **Oviedo**. |
| Aug 2012 | Rimini Conference in Economics and Finance 2012, **Toronto**. |
| Dec 2011 | 4th international conference of the ERCIM Computing and Statistics, **London**. |
| Nov 2011 | European Seminar on Bayesian Econometrics (ESOBE), **Brussels**. |
| Aug 2011 | 10th OxMetrics User Conference, **Maastricht**. |
| May 2011 | Econometric and statistical modelling of multivariate time series, **Louvain-la-Neuve**. |
| Dec 2010 | 3rd international conference of the ERCIM Computing and Statistics, **London**. |

## Seminars

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| Jan 2015 | Université Laval, **Québec** |
| Jan 2015 | Carleton University, **Ottawa** |
| Oct 2014 | Université Paris 1 Panthéon - Sorbonne, **Paris**. |
| Oct 2014 | Ecole Nationale de la Statistique et de l'Administration économique - Bayesian in Paris, **Paris**. |
| Feb 2014 | National Bank of Belgium, **Brussels**. |
| Feb 2014 | Center for Operations Research and Econometrics (UCL), **Louvain-la-Neuve**. |
| Jan 2014 | Centre de Recherche en Economie et Statistique (CREST), **Paris**. |

## Teaching activities

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| 2014 | Visiting Professor at Humboldt University Berlin - IRTG 1792 course on CP/MS models. |
| 2013-2014 | Visiting professor at UCL - Applied Econometrics : Time Series (ECON 2031). |
| 2013 | Teaching assistant of the spring course : Bayesian Econometrics, **Coimbra**. |
| 2009-2012 | Teaching assistant of the course : Advanced Econometrics. |

## Honors and Scholarships

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| 2013-2014 | Associate Fellow of CORE (UCL) |
| 2011-2013 | F.S.R. Fellowship. |
| 2009-2011 | ARC Fellowship on econometric modelling of multivariate financial time series. |

## Side Interests

Football, Guitar, Philosophy.

## Papers

1. Bauwens L., Dufays A. and Rombouts J., *'Marginal Likelihood Computation for Markov Switching and Change-point GARCH Models'*, **Journal of Econometrics**, 2013, 178 (3), 508-522

2. Bauwens L., Dufays A. and De Backer B., *'A Bayesian method of Change-point estimation with recurrent regime : Application to GARCH Models'*, **Journal of Empirical Finance**, 2014, 29, 207-229.

3. Dufays A., *Infinite-State Markov-switching for Dynamic Volatility*, **Journal of Financial Econometrics**, 2015, forthcoming.

4. Bauwens, L., Carpantier J.-F., and Dufays A., *'Autoregressive Moving Average Infinite Hidden Markov-Switching Models'*, **Journal of Business and Economic Statistics**, 2015, Conditionally accepted.

## Discussion Papers

1. Carpantier J.-F. and Dufays A., *'Commodities Volatility and the Theory of Storage'*, CORE Discussion paper 2012/37.

2. Dufays A., *'On the conjugacy of off-line and online Sequential Monte Carlo Samplers'*, 2014, National Bank of Belgium WP 263.

3. Dufays A. and Rombouts, J., *'Sparse Change-point Models'*