

## FERNANDO F. GONÇALVES

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### ADDRESS

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### AFFILIATION

Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Department of Mathematics, Portugal.

Universidade Europeia, Faculdade de Ciências Sociais e Empresariais, Lisbon, Portugal.

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### EDUCATION

Postdoctoral Studies, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (2009–2012, visiting M.R. Grossinho), and Mathematical Sciences Institute, Australian National University, Canberra, Australia (2008–2009, visiting R. Maller and D. Heath).

PhD in Mathematics and Statistics, University of Edinburgh, UK (2007). Thesis: Numerical approximation of partial differential equations arising in financial option pricing (adviser: I. Gyöngy).

Postgraduate Diploma in Business Studies, specialising in Management, Strategy, and Business Development, ISCTE – University Institute of Lisbon, Portugal (1992).

Licentiate Degree in Economics, specialising in Economic Planning and Mathematical Methods, Universidade de Lisboa, Portugal (1989).

*Bacharelato* in Economics, Universidade de Lisboa, Portugal (1981).

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### RESEARCH INTERESTS

Financial mathematics.

Applied econometrics. (Secondary.)

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## REFEREED PAPERS

A note on the spatial approximation of PDEs with unbounded coefficients – The special one-dimensional case. *Int. J. Appl. Math.*, to be published (2019) (With M.R. Grossinho and E. Morais).

How to clutch skills from higher education curricula: Analysis of Portuguese learning outcomes. *INTED2019 Proceedings* (2019), 8955-8964 (With A. Fidalgo, F. Ramos, and D. Dias). doi: 10.21125/inted.2019.2227

Restyling the higher education landscape: Regional (a)symmetries across Portugal. *INTED2019 Proceedings* (2019), 8965-8974 (With D. Dias, F. Ramos, and A. Fidalgo). doi: 10.21125/inted.2019.2228

Why tourists spend extravagantly in Portugal: A binary logistic regression by quartiles. *Tourism Planning & Development*, **15**(4) (2018), 458–472 (With A. Correia and M. Kozac). doi: 10.1080/21568316.2017.1360934

Spatial approximation of nondivergent type parabolic PDEs with unbounded coefficients related to finance. *Abstr. Appl. Anal. – Special Issue: Functional Differential and Difference Equations with Applications 2013*, **2014**: Article ID 801059 (2014). (With M.R. Grossinho). doi: 10.1155/2014/801059

Discretisation of abstract linear evolution equations of parabolic type. *Adv. Difference Equ.*, **2012**:14 (2012), 1–29. (With M.R. Grossinho and E. Morais). doi:10.1186/1687-1847-2012-14

On the space discretization of PDEs with unbounded coefficients arising in financial mathematics – the case of one spatial dimension. *C. R. Acad. Bulgare Sci.*, **63**(1) (2010), 35–46. (With M.R. Grossinho and E. Morais).

Space discretization of Cauchy problems for multidimensional PDEs with unbounded coefficients arising in financial mathematics. *C. R. Acad. Bulgare Sci.*, **62**(7) (2009), 791–798. (With M.R. Grossinho).

Numerical approximation of multidimensional parabolic partial differential equations arising in financial mathematics. *Math. Balkanica*, **23**(1–2) (2009), 111–132. (With M.R. Grossinho).

A note on the numerical approximation of parabolic equations in Hölder spaces. *Int. J. Appl. Math.*, **22**(2) (2009), 227–243. (With M.R. Grossinho).

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## OTHER PUBLICATIONS

Evaluation of the cultural and heritage tourism routes – Case study: mainland Portugal. Proceedings of the ICOT2018 – International Conference on Tourism – Emerging Tourism Destinations: Working towards Balanced Tourism Development, Greece (2018). (With C.V. Mota).

Evaluation of tourism routes – Case study: mainland Portugal. Proceedings of the EATSA – Euro-Asia Tourism Studies Conference 2018 – Challenges of Tourism Development in Asia & Europe, France (2018) (With C.V. Mota).

Evaluation of tourism route governance – Case study: mainland Portugal. Proceedings of the EATSA – Euro-Asia Tourism Studies Conference 2016 – A Pathway for the New Generation of Tourism Research, Portugal (2016). (With C.V. Mota.)

Numerical approximation of partial differential equations arising in financial option pricing. PhD Thesis, University of Edinburgh, UK (2007).

Input-output matrix to the region of the Algarve 1994 (in Portuguese). CIDER/CCDR Algarve (2001), Portugal. (With M.B. Alves, J.A. Silva, E. Rebelo, R. Nunes, P. Batista, P. Carrasco, and P. Garcês.)

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## SEMINARS

*Avaliação das Rotas Turísticas, Culturais e de Património – Estudo de Caso: Portugal Continental* (with C.V. Mota), Talk by C.V. Mota, Congresso Ciência, Cultura e Turismo Sustentável, Academia das Ciências, Portugal (Nov. 26–27, 2018).

*Evaluation of the Cultural and Heritage Tourism Routes – Case Study: Mainland Portugal* (with C.V. Mota), Talk by C.V. Mota, Emerging Tourism Destinations: Working towards Balanced Tourism Development, ICOT2018 – International Conference on Tourism, Kavala, Greece (Jun. 27–30, 2018).

*Evaluation of Tourism Routes – Case Study: Mainland Portugal* (with C.V. Mota), Talk by C.V. Mota, EATSA – Euro-Asia Tourism Studies Conference, Dijon & Château-Chinon, France (Jun. 18–22, 2018).

*Evaluation of Tourism Routes in Mainland Portugal* (with C.V. Mota), Talk by C.V. Mota, Are you lost in your PhD, PhD Workshop Programme, InvTur 2017 Conference, Universidade de Aveiro, Portugal (May 16, 2017).

*Evaluation of Tourism Route Governance – Case Study: Mainland Portugal* (with C.V. Mota), Talk by C.V. Mota, EATSA – Euro-Asia Tourism Studies Conference, Universidade de Lisboa, Portugal (Jun. 27, 2016).

*Tourists' Spending Behavior in Portugal: A Logistic Regression by Quartiles* (with A. Correia and M. Kozak), Talk by A. Correia, 51st TRC – Tourism Research Center Meeting, Helsinki, Finland (Mar. 2016).

*Approximation of a Black-Scholes Type Equation in Unbounded Domains* (with M.R. Grossinho), Talk by M.R. Grossinho, Session Novel Methods in Computational Finance II, Mathematical Modelling in Engineering & Human Behaviour 2013, Instituto Universitario de Matemática Multidisciplinar, Universitat Politècnica de València, València, Spain (Sep. 5, 2013).

*Approximation of Nondivergent Type Parabolic PDEs in Finance* (with M.R. Grossinho), Plenary Talk by M.R. Grossinho, International Conference Advanced Finance and Stochastics, Steklov Mathematical Institute, Moscow, Russia (Jun. 25, 2013).

*Approximation of Parabolic PDEs with Unbounded Coefficients Arising in Finance* (with M.R. Grossinho), Invited Seminar, Lisbon Financial Mathematics 2013, 2nd ed., Spring Meeting – Analytical and Numerical Methods in Finance, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (May 24, 2013).

*On the Localization of PDE Problems Arising in Financial Option Pricing* (with M.R. Grossinho), Talk by M.R. Grossinho, Séminaire du BETA, Université de la Lorraine, Nancy, France (Mar. 2012).

*On the Localization of PDE Problems Arising in Finance* (with M.R. Grossinho and D. Heath), Seminar, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (Mar. 12, 2010).

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## RESEARCH PROJECTS

*Stochastic and Computational Finance* (2017).

Funding: CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal

Project Coordinator: M.R. Grossinho (CEMAPRE).

*Stochastic and Computational Finance* (2016).

Funding: CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal

Project Coordinator: M.R. Grossinho (CEMAPRE).

*STRIKE – Novel Methods in Computational Finance* (2013–2016).

Funding: European Commission, The People Programme – Marie Curie Initial Training Networks – FP7-PEOPLE-2012-ITN (grant agreement no. 304617).

Project Coordinator: M. Ehrhardt (University of Wuppertal, Germany).

ISEG Lisbon Group Coordinator: M.R. Grossinho (CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal).

*Analysis of Nonlinear Partial Differential Equations in Mathematical Finance* (2013–2014).

Funding: FCT – Fundação para a Ciência e a Tecnologia, Transnational Cooperation – Scientific Cooperation Agreement Between Portugal and Slovakia.

Portuguese Group Coordinator: M.R. Grossinho (CEMAPRE - Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal).

Slovakian Group Coordinator: D. Sevcovic (Faculty of Mathematics and Physics, Comenius University, Bratislava, Slovakia).

*Input-Output Matrix to the Region of the Algarve* (1997–1999).

Funding: Portuguese Government and European Commission.

Project Coordinator: J.A. Silva (CIDER - Research Centre for Regional Development and Economy, University of the Algarve, Faro, Portugal).

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## AWARDS

Docent global evaluation, ISEG, "Best Teacher 2017–2018".

Docent evaluation, Universidade de Lisboa, ISEG, 2014–2015, Excelent.

Docent evaluation, Universidade de Lisboa, ISEG, 2011–2013, Excelent.

17th Contest FIISEG – Research Fund of ISEG, Grade B.

Article: Discretization of abstract linear evolution equations of parabolic type. *Adv. Difference Equ.*, **2012**:14 (2012), 1–29. (With M.R. Grossinho and E. Morais.) doi:10.1186/1687-1847-2012-14

Postdoctoral research grant in Mathematics (SFRH/BPD/35734/2008), Fundação para a Ciência e Tecnologia, Portugal (2008–2012).

Project title: *Numerical Approximation of Partial Differential Equations Arising in European Financial Option Pricing – Refinements and Acceleration.*

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## REFEREEING

Applied Mathematics and Computation.

Statistics, Optimization & Information Computing.

Journal of Mathematical Research with Applications.

Applied Mathematics Letters.

International Journal of Computer Mathematics.

Selected Papers Volume – XVIII Annual Congress of the Portuguese Statistical Society.

Journal of Advances in Applied Mathematics and Mechanics.

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## SCIENTIFIC EVENT ORGANISATION

Member of the Scientific Committee, 8th ATMC – Advances in Tourism Marketing Conference, Namur, Belgium (Sep. 4–7, 2019).

Member of the Scientific Committee, Navigating the Future of Management, FCSE, Universidade Europeia, Lisboa, Portugal (Jul. 10–12, 2019).

Member of the Scientific Committee, 7th ATMC – Advances in Tourism Marketing Conference, Casablanca, Morocco (Sep. 6–9, 2017).

Member of the Organizing Committee, ICCF 2017 – 2nd International Conference on Computational Finance, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (Sep. 4–8, 2017).

Member of the Organizing Committee, Stochastics & Computational Finance 2015 – from Academia to Industry, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (Jul. 6–10, 2015).

Member of the Organizing Committee, Lisbon Financial Mathematics 2013, 2nd ed., Spring Meeting – Analytical and Numerical Methods in Finance, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (May 24–25, 2013).

Organiser, jointly with Timberlake Consultores Lda, of annual training course series on Statistics and Econometrics with scientific software, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal:

- Econometrics Summer School using STATA, Jul. 9–13, 2013;
- Data Management and Analysis using STATA (2nd ed.), Mar. 25–26, 2013;
- Métodos Estatísticos e Económicos com o STATA (4<sup>a</sup> ed.), Jul. 4–6, 2012;
- Data Management and Analysis using STATA, Apr. 2–3, 2012;
- Revisão sistemática da literatura com Endnote, Feb. 6, 2012.

Member of the Organizing Committee, Lisbon Financial Mathematics 2011, Winter Meeting – Lévy Processes and Applications to Finance, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (Dec. 16–17, 2011).

Member of the Organising Committee, 8th Congress of APDIO – Associação Portuguesa de Investigação Operacional, University of Algarve, Faro, Portugal (Nov.–Dec. 1998).

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## **STUDENT SUPERVISION**

José Almeida, Doctorate Programme in Management, Universidade Europeia, Lisbon, Portugal (2019–present, with D. Dias).

Cristina Abreu, Doctorate Programme in Tourism Management, ISCTE – University Institute of Lisbon & Universidade Europeia, Portugal (2018–present, with J. Menezes and C. Marques).

António Valente, Doctorate Programme in Management, Universidade Europeia, Lisbon, Portugal (2016–present, with I. Saur-Amaral).

Cátia Godinho, Doctorate Programme in Management, Universidade Europeia, Lisbon, Portugal (2016–present).

Carlos Mota, Doctorate Programme in Tourism Management, ISCTE – University Institute of Lisbon & Universidade Europeia, Portugal (2014–present).

Liliana Matos Pereira, Approximation of degenerate partial differential equations arising in finance, Doctorate Programme in Mathematics Applied to Economics and Management, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (2018).

Eva Virgínia Araújo Morais, Analytical and numerical methods for some problems related to financial option pricing, Doctorate Programme in Mathematics Applied to Economics and Management, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (2013, with M.R. Grossinho).

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## **ACADEMIC AND NON-ACADEMIC POSITIONS**

Assistant Professor, Universidade Europeia, Lisbon, Portugal (2012–present). Coordinator of the Scientific Area of Mathematics (2013–present).

Invited Assistant Professor, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Department of Mathematics, Portugal (2011–present).

Fundação para a Ciência e Tecnologia Postdoctoral Fellow, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (2009–2012).

Visiting Fellow, Mathematical Sciences Institute, Australian National University, Canberra, Australia (2008–2009).

Business Consultant, Portugal (1987–2008).

Lecturer, University of Algarve, Faculty of Economics, Department of Quantitative Methods, Faro, Portugal (1995–2006).

Lecturer, ISG – Business and Economics School, Department of Mathematics, Lisbon, Portugal (1991–1996).

Teaching Assistant, ISCTE – University Institute of Lisbon, Department of Quantitative Methods, Portugal (1989–1994).

Head of the Finance Department, TELIC SA, Lisbon, Portugal (1988–1989).

Consultant, LICAR SA and SOREL SA, Lisbon, Portugal (1984–1987).

Secondary School Teacher of Mathematics, Ministry of Education, Portugal (1980–1984).

Organisation & Methods Manager, SUPA SA, Lisbon, Portugal (1973–1980).

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## SERVICE TO THE PROFESSION

Member of the jury, Gestão de Turismo Dostoral thesis of Alexandra da Silva Mendes, Volatility in City Tourism Demand, ISCTE & Universidade Europeia, Portugal (May 2019).

Arguing member of the jury, Gestão e Estratégia Empresarial Master thesis of Viorica Panco, Efeitos de medo e raiva na impaciência e aversão ao risco dos decisores, Universidade Europeia, Faculdade de Ciências Sociais e Empresariais, Portugal (Jul. 2018).

Member of the Scientific Committee, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (2009–present).

Member of the jury, undergraduate admission of candidates aged 23 and over, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (2012–present).

Arguing member of the jury, Financial Mathematics M.Sc. thesis of Belchior César Xavier Mário, Apreçamento de opções europeias, americanas e bermudas usando modelos binomial e trinomial, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (Jul. 2016).

Member of the Scientific Committee for Access and Qualification Accreditation, Universidade de Lisboa (2013–14).

Arguing member of the jury, Financial Mathematics M.Sc. thesis of José Manuel Teixeira Santos Cruz, Integro-differential equations for option pricing in exponential Lévy models, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (Dec. 2013).

Member of the jury, Mathematics Applied to Economics and Management Ph.D. thesis of Eva Virgínia Araújo Morais, Analytical and numerical methods for some problems related to financial option pricing, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (May 2013).

Arguing member of the jury, Financial Mathematics M.Sc. thesis of Sofia Sande de Araújo, Numerical algorithms for the valuation of installment options, Universidade de Lisboa, ISEG – Lisbon School of Economics and Management, Portugal (Dec. 2012).

Member of the Managing Board, CEMAPRE – Centre for Applied Mathematics and Economics, ISEG, Universidade de Lisboa, Portugal (2011–2013).

Member of the jury, international traineeship programme of AIESEC – *Association Internationale des Étudiants en Sciences Économiques et Commerciales*, University of Algarve, Faro, Portugal (2005–2006).

Member of the Managing Board, Faculty of Economics, University of Algarve, Faro, Portugal (1998–2000).

Member of the Pedagogic Council, Faculty of Economics, University of Algarve, Faro, Portugal (1996–1998).

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## SCIENTIFIC AND PROFESSIONAL SOCIETIES

Member of SPM – Sociedade Portuguesa de Matemática.

Member of EMS – European Mathematical Society.

Member of the Ordem dos Economistas.

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