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We hereby certify that, ***Alan De Genaro***, **USP - Fac. de Economia, Adm. e Ciências Contábeis**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Pricing interest rate derivatives under monetary policy changes**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Alberto Adrego Pinto***, **Universidade do Porto**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Prices dependence of social preferences**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Alvaro Cartea***, **University of Oxford**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: “**Commodities**”.

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Bruno Dupire***, **Bloomberg - NY**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Some Apllications of Machine Learning to Finance**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Davi Michel Valladão***, **Pontifícia Universidade Católica do Rio de Janeiro**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Data-driven Robust Option Pricing**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***David Evangelista da Silveira Junior***, **King Abdullah Universitt of Science and Technology**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Optimal inventory management and orderbook modelling**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Dietmar Leisen***, **Johannes-Gutenberg-Universitaet-Mainz**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Heterogeneity in Risk Preferences leads to Stochastic Volatility**".

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We hereby certify that, ***Emmanuel Gobet***, **École Polytechnique**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Modeling the management of microgrid equipped with PV panels and battery; resolution using McKean Forward-Backward Stochastic Differential Equations**".

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We hereby certify that, ***Fernando A L Aiube***, **Universidade do Estado do Rio de Janeiro**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Financialization of the commodity future markets through factor models**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Gilles Pagès***, **Univ. Pierre et Marie Curie**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Functional convex order preserving approximations with application to the pricing of derivatives**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Gyorgy Varga***, **Fce Consultoria**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**The relative trading activity in options and stocks in Brazil**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Jorge P. Zubelli***, **Instituto Nacional de Matemática Pura e Aplicada**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Stochastic Impulse Games for Retail Energy Markets**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***José Germán López Salas***, **École Polytechnique**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**CVaR Variation Margin Pricing and Hedging**".

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We hereby certify that, ***Julien Claisse***, **École Polytechnique**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Branching diffusion representation of semi-linear elliptic PDEs and numerical applications**".

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We hereby certify that, ***Julien Guyon***, **Bloomberg - NY**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**On the consistent modeling of SPX and VIX options**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Lakshithe Wagalath***, **Iéseg School of Management**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Feedback effects and endogenous risk in financial markets**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Lane Hughston***, **Brunel University London**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Optimal taxation and wealth redistribution**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Leandro Dias Daumas***, **Universidade do Estado do Rio de Janeiro**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: “**Hedging stocks through commodity indexes: A DCC-GARCH approach**”.

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Marco Avellaneda***, **Courant Institute of Mathematical Sciences**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Volatility futures and ETNs in the US and European markets**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***MARIANA PIAIA ABREU***, **Universidade Federal Fluminense**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Structure of Control in Financial Networks: an Application to the Brazilian Stock Market**".

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We hereby certify that, ***Martino Grasselli***, **Padova University**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**A Consistent Stochastic Model of the Term Structure of Interest Rates for Multiple Tenors**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Matheus Grasselli***, **Mcmaster University**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**On the normality of negative interest rates**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Matheus Pimentel Rodrigues***, **USP - Escola Politécnica**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**SOME EVIDENCE OF THE IMPORTANCE OF MEASURING DEFAULT RISK FOR EQUITIES**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Nizar Touzi***, **École Polytechnique**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Branching diffusion representation of nonlinear PDEs**".

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We hereby certify that, ***Rafael Serrano Perdomo***, **Universidad del Rosario**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25^{th} to 30^{th}, 2017 and presented the following work: "**Optimal portfolio allocation for an investor with insurance risk and differential rates**".

Rio de Janeiro, November 30^{th}, 2017.

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We hereby certify that, ***Raphael Douady***, **Stony Brook University**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Dominant Factor Analysis**".

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We hereby certify that, ***Rodrigo Targino***, **Fundação Getúlio Vargas**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Efficient Monte Carlo algorithms for risk allocation**".

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We hereby certify that, ***Roger Lee***, **University of Chicago**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Cumulant formulas for implied volatility**".

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We hereby certify that, ***Ryan Donnelly***, **University of Washington**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Substitute Hedging with (Cross) Price Impact**".

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We hereby certify that, ***Sebastian Jaimungal***, **University of Toronto**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Machine Learning and Stochastic Control for Algorithmic Trading**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Stefano De Marco***, **École Polytechnique**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: “**Enhancing rough forward variance models with VIX smiles**”.

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Stephane Crepey***, **Université Evry Val d´Essonne**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**XVA analysis**".

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We hereby certify that, ***Teemu Pennanen***, **King´s College London**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Economic valuation of defined benefit pension liabilities**".

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We hereby certify that, ***Uwe Schmock***, **Vienna University of Technology**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Extended CreditRisk+: Dependent Defaults and Guarantees**".

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We hereby certify that, ***Vinícius Viana Luiz Albani***, **Universidade Federal de Santa Catarina**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: "**Local Volatility Calibration in Commodity Markets**".

Rio de Janeiro, November 30th, 2017.

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We hereby certify that, ***Yuri Fahham Saporito***, **Fundação Getúlio Vargas**, participated in the Mathematics & Finance: Research in Options 2017, held at Instituto Nacional de Matemática Pura e Aplicada - IMPA - Rio de Janeiro, from November 25th to 30th, 2017 and presented the following work: “**Stochastic Control and Differential Games with Path-Dependent Controls**”.

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