







MPA, Rio de Janeiro, Brazil



We hereby certify that, cesar igal torres ortiz, 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 poster: "Bayesian Econometrics in Macro-Stress Testing".

Rio de Janeiro, November 30th, 2017.





















MPA, Rio de Janeiro, Brazil



We hereby certify that, *Helder Alan Rojas Molina*, Instituto de Matemática e Estatística, 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 poster: "A stochastic model for price and spread dynamics in some liquidity regimens".

Rio de Janeiro, November 30th, 2017.





















MPA, Rio de Janeiro, Brazil



hereby certify that, Isaque Santa Brigida Pimentel, 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 poster: "Hedging with non-quadratic local risk-minimization".

Rio de Janeiro, November 30th, 2017.



















MPA, Rio de Janeiro, Brazil



We hereby certify that, Luiz Paulo da Cruz Scarp, Centro Universitário **Unifaminas**, 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 poster: "An agent-based artificial options market".

Rio de Janeiro, November 30th, 2017.



















MPA, Rio de Janeiro, Brazil



We hereby certify that, *Matheus Lima Cornejo*, Universidade Federal do Espirito Santo, 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 poster: "Robust singular spectrum analysis: an empirical study".

Rio de Janeiro, November 30th, 2017.





















MPA, Rio de Janeiro, Brazil



We hereby certify that, *Melba Luz Torres Ortiz*, Instituto de Matemática e Estatística, 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 poster: "Numerical Solutions of Partial Differential Equations via Simulated Annealing".

Rio de Janeiro, November 30th, 2017.



















MPA, Rio de Janeiro, Brazil



We hereby certify that, Rosember Guerra, Eafit, 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 poster: "Focused Estimation in Portfolio Selection Problems".

Rio de Janeiro, November 30th, 2017.





















MPA, Rio de Janeiro, Brazil



We hereby certify that, Winicius Botelho Faguieri, 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 poster: "Financialization of the commodity future markets through factor models".

Rio de Janeiro, November 30th, 2017.





















MPA, Rio de Janeiro, Brazil



We hereby certify that, Yuri Resende Fonseca, Instituto Militar de **Engenharia**, 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 poster: "Predicting volatility surfaces with GAS models and SABR parametrization".

Rio de Janeiro, November 30th, 2017.











