

SEBASTIEN GURRIERI

- sebgur@gmail.com
- Current residence: London
- Citizenship: French

Summary

- Ph'D in Theoretical Physics, Quantitative Mathematics background.
- Model validation of Pricing and Risk Management models in Fixed Income and Equity.
- Model Risk measurement
- Vanilla and exotic models for derivatives, Monte-Carlo and Finite Differences.
- Programming in C++, C#, CUDA, VBA.
- Pricing software development at sdev-finance.com

Experience

Quantitative Analyst, Vice-President

Mizuho International Plc.

May 2011 – Present

Model Validation of Fixed Income and Equity derivatives models, model risk measurement, methodology support in Credit and Market Risk. Implementation of model validation library in C#.

- Management of model validation team in Murex project
- Validation of vanilla swaps, interest rate options, CDSs in Murex and Bloomberg
- Validation of curve construction in Bloomberg, major and emerging currencies
- Validation of interest rate exotics in Murex
- Validation of hybrid FX/IR exotics in in-house and Murex models
- Creation of framework for measurement of Model Risk
- Construction of model register, writing model validation policies
- Implementation of Operational Risk VaR engine
- Calculation of Risk Not In VaR
- Methodology support for VaR and Potential Exposure

Quantitative Analyst, Associate

Mizuho Securities Co., Ltd.

Oct. 2007- May 2011

Model Validation of Fixed Income and Equity exotic pricing models. Implementation of model validation library in C++.

- Hybrid models FX/IR for PRDCs with Bermudan callability, barriers, TARN
- Hybrid models EQ/IR for Equity Linked Notes, digital coupons, knock-in/out barriers
- Calibration methods (Displaced Diffusion, Dupire, Hull-White, CIR, Hybrids)
- Numerical methods: Pseudo/Quasi-Monte-Carlo, multi-factor PDEs, analytical solutions

Science Teacher

Ecole Francaise du Kansai

Sep. 2005- Sep 2007

Teaching Mathematics, Physics and Chemistry at Junior and High-School levels.

Post-Doctoral Researcher

Kyoto University
Jul. 2003- Jul 2005

Theoretical Physics, Compactification of String Theory.

Education

Ph'D in Theoretical Physics

Marseille University, France
1999-2003

[N = 2 and N = 4 supergravities as compactifications from string theories in 10 dimensions](#)

BSc, Chemical Physics

Toulon University, France
1997-1999

Thesis on the properties of Lithium Vanadates.

Preparation to Engineering Schools

Lycee Louis Le Grand, Paris, France
Lycee Dumont D'Urville, Toulon, France
1995-1996

Mathematics, Physics, Chemistry.

Publications

Introduction to CUDA Programming in Finance

SSRN, 2014
Chapter 15 of "A Practical Guide to Quantitative Portfolio Trading"

Monte-Carlo Calibration of Hybrid Local Volatility Models

SSRN, 2012
Calibration of Hybrid FX/IR Dupire model with a Monte-Carlo algorithm, with CUDA code.

An Analysis of Sobol Sequence and the Brownian Bridge

SSRN, 2011
Investigation into the workings of Sobol Sequence and the Brownian Bridge at high dimensions.

A Class of Term Structures for SVI Implied Volatility

SSRN, 2010
Adding term structures to SVI Implied Volatility while respecting no-arbitrage conditions.

Calibration Methods of Hull-White Model

SSRN, 2009
Description and analysis of several strategies to calibrate Hull-White model with time-dependent parameters.