

---

# MATHEMATICAL METHODS IN ECONOMICS AND FINANCE

---

**Editor and Managing Director:**

Elio Canestrelli

**Guest Editors:**

Marco Corazza

Claudio Pizzi

**Editorial Board:**

Elio Canestrelli

Marco Corazza

Paola Ferretti

**Editorial Assistants:**

Diana Barro

Martina Nardon

**Advisory Board:**

Anna Rita Bacinello, Trieste

Antonella Basso, Venezia

Paolo Bortot, Venezia

Giovanni Castellani, Venezia

Francesco Mason, Venezia

Graziella Pacelli, Ancona

Paolo Pianca, Venezia

Bruno Viscolani, Padova



## Contents

<b>The underwriting cycles under Solvency II</b> .....	1
<i>Anthony Derien</i>	
<b>Empirical pricing kernels and investor preferences</b> .....	19
<i>Kai Detlefsen, Wolfgang Karl Härdle and Rouslan A. Moro</i>	
<b>Calibration of a multiscale stochastic volatility model</b> .....	49
<i>Lorella Fatone, Francesca Mariani, Maria Cristina Recchioni and Francesco Zirilli</i>	
<b>A reserve risk model for a non-life insurance company</b> .....	63
<i>Salvatore Forte, Matteo Ialenti and Marco Pirra</i>	
<b>Parameter estimation for differential equations using fractal-based methods and applications to economics and finance</b> .....	79
<i>Herb Kunze, Davide La Torre, Cinzia Colapinto, Jelena Loncar and Matteo Fini</i>	
<b>Jump telegraph processes and a volatility smile</b> .....	93
<i>Nikita Ratanov</i>	
<b>Estimating the true embedded risk management cost of total return strategies</b> .....	113
<i>Francesco Sandrini, David Edelman and Dermot Ryan</i>	

