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Brief Report

Report on the Fifth International Mathematics in Finance (MiF) Conference 2014, Skukuza, Kruger National Park, South Africa[1]

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The *Journal of Risk and Financial Management* was first published in 2008, and, since its inception, has published a number of theoretical and empirical papers on various topics in risk and financial management, in pursuit of its stated goal of advancing knowledge and understanding in the practice of risk and financial management through the publication of high quality papers that are relevant to practitioners in the field.

Now in its seventh year, it is pleasing that, of several planned special issues of the journal, one will be published on "Selected Papers from the Fifth International Conference on Mathematics in Finance (MiF) 2014", comprising selected papers, including plenary presentations, by leading international researchers in risk and financial management.

Based on selected papers from MiF 2014, the special issue will be guest co-edited by Chia-Lin Chang (Department of Applied Economics and Department of Finance, National Chung Hsing University, Taiwan) and Coenraad Labuschagne (Department of Financial and Investment Management, University of Johannesburg, South Africa).

MiF 2014 was organized by North-West University, University of Cape Town and University of Johannesburg at Skukuza, Kruger National Park, South Africa, in August 2014, and held at the Skukuza Conference Centre.

The topics covered at MiF 2014 included areas such as Actuarial Science, Quantitative Risk Management, Financial Mathematics, and Business Analytics (Data Mining). First held in 2002, and repeated every three years, the primary objective of the MiF international conference series is to bring

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together academics, practitioners and graduate students who are working in the broad field of financial mathematics and statistics.

It is envisaged that participants who are at the forefront of the area will reflect on current open problems and relevant challenges and will indicate directions for future research. The intention is that the interplay between theory and practice, as well as issues relating to the dissemination of knowledge and teaching in this field, will be discussed critically.

The conference focus is on various aspects within financial mathematics and statistics, with special attention paid to the interaction between the different areas, emphasizing the role of mathematics and statistics in finance.

Given this emphasis, it is not surprising that the topics to have been covered at various MiF conferences include the following:

(1) Contemporary methods in the field of business analytics;
(2) Investment and credit risk;
(3) New methods of quantitative risk analysis, modeling and management, including actuarial science;
(4) Quantitative and computational methods in finance;
(5) Financial mathematics, measure theory, functional analysis, and modern stochastics in finance.

At MiF 2014, there were around 60 presentations by leading international and domestic experts, from countries including, Canada, Finland, France, Italy, Poland, Taiwan, The Netherlands, United Kingdom and USA, as well as by a number of outstanding domestic graduate students, over a period of four and a half days.

There were nine plenary presentations and two invited presentations, all of which were given by international experts. The plenary presentations included solvency and model uncertainty, financial networks, asset price dynamics, multivariate stress testing, intensity models, counterparty risk valuation, modeling daily latent variables, contagion effects and collateralized credit value, leverage and feedback effects, and finite mixture models.

One of the invited presentations, the Inaugural Graeme West Lecture, in memory of a beloved friend and colleague of many participants at the conference, was presented by Chia-Lin Chang, was attended by members of the West family and was, for many, one of the highlights of the conference.

For the first time in the MiF conference series, parallel sessions were held owing to the large number of papers accepted for presentation, with one session being more theoretical and the second being more practical.

The meaning of "practical" at an MiF conference would seem to remain essentially theoretical, with topics on tempering, superadditivity, conditional distortion, bubbly markets, derivatives and more derivatives, drift information, Kalman filters, Novitov conditions, jump processes, swaps and more swaps, recovery theorem, copulas and more copulas, Bernstein estimators, stochastic volatility, strong convergence, lit and dark pools, Feynman-Kac approaches to limit order books, polynomial preserving processes, Markov cubature rules, and path dependent volatility, among others.

These theoretical topics were interspersed with "practical" sessions on multi-period multi-segment approaches, compound distributions, multilevel causality, risk averse reinforcement, conditional deviations, Heston model and more Heston models, long term implied volatility, automatic binning,

rational term structure models, pricing point processes, Markov chains, options and more options, credit and funding risk, and stochastic claims, and floorlets and caplets.

At future MiF conferences, it might be worth encouraging the presentation of a greater number of empirical papers, though this might be less appealing to the bulk of the participants, who are mathematicians, as the title of the conference suggests.

On the social side, in addition to taking sunrise and sunset tours of the magnificent Kruger National Park in search of the Big Five, as well as many other stunning fauna, the conference had two braai, the quintessential barbeque in South Africa (where eating chicken can lead to accusations of being a vegetarian), with one in the dense bush where armed guards stood with loaded guns in the event of an attack by larger carnivores.

Overall, the MiF series of international conferences is one that should not to be missed for the intellectual, scenic or social excitement and absolute satisfaction.