

Mathematical Finance Workshop
International Mathematics Research Meeting
Strathmore University
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Mathematical Finance Workshop - International Mathematics Research Meeting

- ▶ 25 participants
- ▶ 15 high-quality & diverse talks, which allowed for extended seminars
- ▶ Introduction to **Mathematical Finance** in South Africa in the first seminar on Monday
- ▶ Discussion of **Actuarial Science & Financial Mathematics** in Kenya on Thursday
- ▶ Mathematical Finance is closely aligned with Actuarial Science & attracts similar students

East African & Kenyan University Activity

- ▶ University of Nairobi:
 - ▶ Actuarial Science undergraduate & graduate programme since 2000
 - ▶ Mathematical Finance undergraduate programme to be introduced in 2013
 - ▶ No Mathematical Finance graduate programme yet
- ▶ Jomo Kenyatta University of Agriculture & Technology:
 - ▶ Actuarial Science undergraduate programme since 2002
- ▶ Maseno University:
 - ▶ Actuarial Science undergraduate programme since 2005
- ▶ Strathmore University:
 - ▶ Actuarial Science undergraduate programme since 2010
 - ▶ Financial Economics undergraduate programme

East African & Kenyan University Activity

- ▶ Makerere University - Uganda:
 - ▶ Actuarial Science undergraduate programme since 2004
- ▶ Other universities that have just started :
 - ▶ UDSM - Tanzania
 - ▶ Kimathi University College (JKUAT) with an undergraduate programme in Financial Engineering
 - ▶ Bondo University College (Maseno)
 - ▶ Chepkoilel University College (Moi)
 - ▶ Kenyatta University
 - ▶ MMUST, and other university colleges

Kenyan Industry Activity

- ▶ Diverse & segmented financial services industry including:
 - ▶ Medical & general insurance
 - ▶ Retail & investment banking
 - ▶ Asset management
 - ▶ Pension funds
 - ▶ Investment fund managers
- ▶ Largest regional stock exchange - Nairobi Securities Exchange
- ▶ Currently only equity trading - plans to offer derivatives

South African University Activity

- ▶ University of the Witwatersrand:
 - ▶ Industry sponsored programme
 - ▶ Programme in Advanced Mathematics of Finance - Honours, Masters & PhDs (since 1989)
 - ▶ Mathematics in Finance Conferences (every 3 years - KNP - with North-West University & UCT)
 - ▶ Annual AIMS Summer School in Mathematical Finance in February (with UCT & AIMS)
 - ▶ Over 300 Honours, Masters & PhD graduates in 15 years
- ▶ University of Cape Town:
 - ▶ Industry sponsored programme
 - ▶ MPhil in Mathematical Finance (since 2001)
 - ▶ African Collaboration for Quantitative Finance & Risk Research
 - ▶ All Africa House Fellowships

South African University Activity

- ▶ AIMS:
 - ▶ Mathematical Finance in the curriculum
 - ▶ Mathematical Finance as one of the research directions
 - ▶ Annual Summer School in February
- ▶ North-West University - Centre for Business Mathematics & Informatics (BMI):
 - ▶ Industry sponsored programme
 - ▶ Mathematical Finance from Undergraduate to Masters level
 - ▶ Mathematical Finance research with Maths Dept
 - ▶ PRMIA (professional) accreditation
- ▶ Pretoria University, Stellenbosch University, UWC, University of Venda & others

South African Industry Activity

- ▶ Very large stock market - JSE Securities Exchange
- ▶ Large interest-rate, commodity, forex & futures markets
- ▶ Sophisticated market for derivatives
- ▶ Largest employer of mathematical graduates in South Africa
- ▶ Very computationally intensive profession
- ▶ **Large donor & contributor to mathematical education**

Future Initiatives for Mathematical Finance

- ▶ Ascertain demand for graduates & at what level
- ▶ Source external examiners from South Africa
- ▶ Source industry contacts & request:
 - ▶ **Funding**, curriculum assistance & reviews
 - ▶ Participation in teaching & seminars
 - ▶ Training placements
 - ▶ Research topics
- ▶ Research:
 - ▶ SA - AIMS & then PhD at one of SA universities, or
 - ▶ UCT/Wits Masters & PhD programmes
 - ▶ Ensure local access to Math Finance journals
 - ▶ Initiate collaborative research within Africa
 - ▶ Attend current available workshops, summer schools & conferences in Africa (SAMSA)
 - ▶ Organise another Kenyan conference