

# EVT-Copula Workshop

30 November 2007, London

## Background

Following the enthusiastic feedback from the 2005 CARISMA Financial Engineering workshop and the distinguished CARISMA lecture given by Prof. Alexander McNeil, we have decided to focus once again on EVT and Copula methods in quantitative finance.

Financial risk management confronts us with a real world of heavy-tailed risks, rapid changes and complex interdependencies which force us to go beyond standard statistical models and simplifying assumptions of normality to develop more sophisticated methodologies.

EVT is a practical and useful tool for modelling and quantifying risk. This workshop provides an overview of the role of extreme value theory (EVT) in risk management, as a method for modelling and measuring extreme risks.

Copula functions represent a methodology which has recently become the most significant new tool to handle in a flexible way the co-movement between markets, risk factors and other relevant variables studied in finance. It has become more and more popular both among academics and practitioners in the field of finance principally because of the huge increase of volatility and erratic behaviour of financial markets. In this workshop we will introduce the use of copulas and consider applications to credit risk.

Topics covered under Copulas:

- Coping with Copulas
- Types of Copulas
- Fitting Copulas to Data

Topics covered under EVT:

- Theory of Maxima,
- Fisher-Tippett Theorem,
- Maximum Domains of Attraction,
- Estimating and Fitting Extreme Value Distributions

## The Presenters

**Thorsten Schmidt** is Assistant Professor in Financial Mathematics at the University of Leipzig. He has a strong background in statistics and probability theory and is currently working on pricing and hedging credit risk, infinite dimensional models, shot-noise effects and incomplete information issues. His works cover moment estimators for MARCH-models, the application of SDEs on Hilbert spaces, including Lévy random fields, to credit risk, in particular to CDOs, shot-noise models applied to equity, credit and energy markets and the use of nonlinear filtering theory for pricing corporate securities under noisy asset information. Furthermore, he has written articles on the relation of extreme value theory and risk measures. His work "Coping with Copulas", in "Copulas: From Theory to Applications in Finance", Risk Books 2007, as well as the book "Quantitative Risk Management" by A. McNeil, R. Frey and P. Embrechts will serve as the basic source for this workshop.

### Guest Presentations:

*Aggregation of Market and Credit Risk Using Copulas*, Oliwia Kosłowska, CARISMA

- Levels of risk aggregation
- The model
- Loss aggregation
  - general mathematical framework:
  - marginal distributions
  - copulas and dependence structure
- Numerical results

*Scenario Generation with Copula Method*, Xiaochen Sun, CARISMA



Organised by:



# EVT-Copula Workshop



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**Event**

- Financial Innovation Workshop  
19 November 2007
- Credit Risk & Interest Rate Risk Workshop  
27 November 2007
- LDI/ALM Workshop  
28 November
- EVT-Copula Workshop  
30 November

**Registration Fee**

	1 Day	2 Days	3 Days	4 Days
Student	£ 75	£ 150	£ 210	£ 280
Academic	£ 105	£ 200	£ 295	£ 395
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The registration fee for the event covers the following: Attendance, copy of the documentation, lunches and light refreshments. Accommodation is not included, but reduced rates have been negotiated. Please contact UNICOM Seminars for details. Detailed delegate information will be sent to you approximately two weeks before the event. Payment should be sent with the registration form or at the latest, paid at the event. All invoices carry a 10% surcharge which is payable if the fee remains unpaid on the day of the event. What happens if I have to cancel? Confirm your CANCELLATION in writing up to 15 working days before the event and receive a refund less a 10% + VAT service charge. Regrettably, no refunds can be made for cancellations received less than 15 working days prior to the event and the invoice will remain due. UBSUBSTITUTIONS are welcome at any time. You may also TRANSFER your booking to a future event for a small additional charge of £125/person/day, payable within one week of invoice.

As we cannot guarantee that exactly the same course will be available, the transfer will be open to any other event taking place within six months from the date of the original event. The organisers reserve the right to amend the programme if necessary. INDEMNITY: Should for any reason outside the control of UNICOM Seminars Ltd, the venue or the speakers change, or the event be cancelled due to industrial action, adverse weather conditions, or an act of terrorism, UNICOM Seminars Ltd will endeavour to reschedule, but the client hereby indemnifies and holds UNICOM Seminars Ltd harmless from and against any and all costs, damages and expenses, including attorneys fees, which are incurred by the client. The construction validity and performance of this Agreement shall be governed by all aspects by the laws of England to the exclusive jurisdiction of whose court the Parties hereby agree to submit.