Loughborough University

3rd International Conference on Econophysics and Summer School on Teaching and Enterprise

Department of Physics and Business School, Loughborough University, September 23-October1, 2011

Econophysics is an emerging interdisciplinary field that takes advantage of concepts and methods of statistical physics to analyse economic phenomena. The validity and promise of this approach(e.g., using methods from statistical physics to analyse the success and failure of companies) was demonstrated by a wide range of recent findings relating to the dynamics of companies' development.

By using a deep analogy of economical and financial processes with physical phenomena (treated in many body physics, physical kinetics and statistical mechanics etc), econophysics can predict the growth or death of the company, profit rate and company size optimization, as well as the behaviour, growth and failure of markets and hole economy.

The main goal of the meeting is to expose today's economic problems and other quantitative economic sciences into the shape of the modern physics. The main topics of the conference are: models for high frequency data, econophysics and complex adaptive systems in finance, analogy between neural and financial networks. We plan to address financial market analysis and modeling, complexity approach to economic networks, grinding economic paradigms as the rationality of economic agents, the invisible hand of market and capital market efficiency etc.

The primary aim of this workshop is to provide future econophysicists with a broad perspective of the basic knowledge on the emerging field and on the application of econophysics theory to the financial market and the interdisciplinary studies in mathematics, economics, financial engineering, and physics as well as other fields. The recent financial crisis has stimulated a search for new financial tools. A special attention was given to stability of the financial systems as a whole.

The school will aim to explore the interplay between complexity and stability of financial networks to present new directions in this very fast developing field.

Topics of interest include, but are not limited to

- Econophysics
- Financial networks
- Computational neuroscience
- Superconducting neural networks
- Cellular automata
- Self-organizing systems
- Mathematics in economy
- finances and stock market
- Internet, financial, social,neuro and other networks,
- Complex adaptive systems in finance
- Neural hardware implementation
- Bio-inspired Artificial Neural Networks
- Quantum neural networks
- Enterprising

Summer school on the teaching Enterprise for a broad audience

Despite of long history of application of mathematical and physical method to economy and enterprise (e.g., Black–Scholes model for option price, simple exchange economy model, SA model), the econophysics as a separate scientific field was only recognized about 10 years ago. Still there is no complete set of training courses in UK Universities. The content of the programme of this summer school is highly interdisciplinary, assuming transfer of know ledges between physics, economics, enterprise and econophysics. School will consist of several short (6 lectures) courses on Econophysics, Enterprise - Entrepreneurship – Innovation, and financial market and enterprise modelling.

Venue

The Workshop will take place in Loughborough, a market town with a population of approximately 50,000. Loughborough is the largest town in the county of Leicestershire in the East Midlands. Attractions in the town itself include a beautiful park, a steam railway and the world's largest bell foundry. It is in the heart of the English countryside with Charnwood Forest on the doorstep and the Peak District, the second most visited National Park in the world, within reach. The thriving Midlands cities of Leicester, Nottingham and Derby are all nearby and they, together with Loughborough, provide a wide variety of cultural and sporting opportunities through their theatres, concert halls, museums and sports facilities.

Registration

Please register on-line before **September 16 2011**, indicating a proposed topic or title and short abstract. The registration fee is £250 sterling before 1 September 2011 and £300 sterling after. Registration is impossible after September 16, 2011 as number of participants is limited. The fee includes accommodation from September 23 to October 1, meals, attendance at all sessions, refreshments, conference dinner, conference excursion, conference material.

Travel Information to Physics Department

Loughborough is at the heart of England in the northern most part of the county of Leicestershire and being centrally placed it is well served by road, rail and air.

Please, see the travel information on how to get to the Physics Department on

http://www.lboro.ac.uk/departments/ph/about/travel.html.

If you are arriving by car you will need to take junction 23 off the M1 and follow the signs to the university. The postcode for sat nav use is LE11 3TU. At the security gate please inform them you are here to attend the conference. Once through security please follow the yellow signs located along the main university road for Conference Car Parking. These should direct you to car park 5 or car park 5a. If you have any questions regarding any of the above please do not hesitate to contact Victoria Webster v.j.webster@lboro.ac.uk

Organizing Committee

- Chairman: Feodor V Kusmartsev (F.Kusmartsev@lboro.ac.uk), head of Physics Department, director of the AQDJJ network.
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