



UNIVERSITY  
OF TRENTO



Tecnologie per l'Economia  
Computazionale e Sperimentale

# Eighth Trento Summer School

## Intensive course in Agent-Based Finance

CEEL program in Adaptive Economic Dynamics

**2-13 July 2007**

Centro Congressi Panorama, Trento - Italy

### Program Directors

Axel Leijonhufvud  
Enrico Zaninotto

### Co-Directors of the School

Cars Hommes  
Thomas Lux

### Guest Lecturers

Jasmina Arifovic  
Robert Axtell  
Doyne Farmer  
Klaus Reiner Schenk-Hoppe'  
Shyam Sunder

### Summary of the Course

Financial markets are complex systems whose frequent volatile eruptions, bubbles and crashes are often described by terms such as 'out-of-equilibrium-dynamics', 'self-organized criticality', and 'life at the edge of chaos' even in the popular press. The huge numbers of agents interacting and competing within modern financial markets indeed suggests to treat them as large systems of autonomous sub-units whose macroscopic features might be seen as unintended emergent phenomena of the bustling microscopic activity. The fact that practically all markets that belong to the financial sphere (stock markets, foreign exchange markets, derivatives, precious metals) share a set of extremely robust and quantitatively uniform statistical regularities lends additional credibility to this viewpoint. The Eighth Summer School in the Trento Program in Adaptive Economic Dynamics focuses on Agent-Based Finance (ABF) and is designed to familiarize students with the phenomenology of financial markets and recent agent-based and computational approaches to financial markets. Students will be introduced to the relevant tools of dynamic systems theory, econophysics and agent-based modeling and will be guided to their own independent applications of these tools.

Topics of the summer school include:

- deterministic and stochastic interacting agent asset pricing models
- complexity, nonlinear dynamics, bifurcations, chaos
- mean field approximation, master equations and Fokker-Planck equations
- artificial intelligence and artificial markets
- evolutionary strategy selection and herding behavior
- simulation of stylized facts and estimation of heterogeneous agent models
- laboratory experiments with human subjects

Prior knowledge on these topics is helpful, but not required. The Eighth Summer School will run for two weeks and consists of an intensive course on recent developments in ABF as well as invited lectures by international experts in the field.

### Application Procedure

Persons interested in participating in the Summer School should submit the following:

- the electronic application form
- a detailed Curriculum Vitae
- a two-page essay describing their interest in agent-based finance
- a course transcript from their Ph.D program including advanced examinations passed
- two letters of recommendation

The Trento Summer Schools are intended for Ph.D students and post-doctoral scholars.

Please send all the above documents and information to Prof. Enrico Zaninotto.

We encourage electronic submissions:  
[ccschool@economia.unitn.it](mailto:ccschool@economia.unitn.it)

### Prof. Enrico Zaninotto

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The deadline for application is **30 March 2007**. Admissions decisions will be made and announced by 30 April 2007. All applicants will be informed by e-mail about the results.

For logistical questions and application forms please contact the Summer School secretary at [ccschool@economia.unitn.it](mailto:ccschool@economia.unitn.it) or consult our web page at

<http://www-ceel.economia.unitn.it>

### Computable and Experimental Economics Laboratory (CEEL)

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