# MathMods

## Mathematical Models in Life and Social Sciences

An Intensive Programme funded by the European Commission under the Erasmus Programme and addressed to both MSc and PhD students

**Aims** The MathMods intensive programme aims to provide a solid training background in mathematical modelling viewed as an interdisciplinary subject with relation to sociology, economics, life and biomedical sciences. The proposed activities cover a wide range of modelling methodologies (both classical and more innovative ones), complemented by theoretical mathematical tools, numerics and simulations

**Scholarships** 30 scholarships (15 MSc + 15 PhD) are provided for students belonging to the partner universities (preferably students in mathematics, engineering sciences, biotechnological sciences)

## Structure

- ***5 basic courses*** *(addressed to MSc)*
- ***5 complementary courses*** *(addressed to PhD)*
- ***4 leading courses*** *(common to all students)*
- ***Research seminars***

Education and Culture DG

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2008

L'Aquila

July 6-19

## Organising Committee

***Bruno Rubino***
*(University of L'Aquila)*
***Pierre-Emmanuel Jabin***
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*(Brno University of Technology)*
***Danuta Makowiec***
*(University of Gdansk)*
***Ivars Knets***
*(Riga Technical University)*
***Tomasz Krzyzynski***
*(Koszalin University of Technology)*

## Courses

*A. Alabert (UAB, Barcelona)* - Modelling of random phenomena

*J. A. Carrillo (UAB, Barcelona)* - Fluid-Particle models and simulation

*M. Di Francesco (UAQ, L'Aquila)* - Reaction diffusion systems in population dynamics

*J. Dziedzic (GUT, Gdansk)* - Introduction to cellular automata and their applications

*I. Gasser (UHH, Hamburg)* - Traffic Flow Modelling: from microscopic to macroscopic models

*P.E. Jabin (UNSA, Nice)* - Transport equations in biology

*A. Iske (UHH, Hamburg)* - New trends in adaptive data compression with applications to medical imaging, neuro and biosciences

*D. Makowiec (UG, Gdansk)* - Agent-based modelling of financial markets

*J. Michálek (BUT, Brno)* - Statistical methods of classification used in medical diagnostics

*R. Natalini (IAC-CNR, Roma)* - Partial differential models for biological movements

*B. Piccoli (IAC-CNR, Roma)* - Traffic flow of networks

*R. Repetto (UAQ, L'Aquila)* - Topics in ocular biomechanics

*J. Rybicki (GUT, Gdansk)* - Mathematical models in epidemiology: an introduction

*C. Simeoni (UNSA, Nice)* - Numerical methods for mathematical models

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## Local Organising Committee

**Marco Di Francesco, Bruno Rubino**
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