Structure

Series of five complementary courses with 3 or 4 lectures of 1h/1h30m for each course and a limited number of selected talks of 20/30 minutes each by young researchers or postdocs.

For details please see http://maei.lmc.fc.ul.pt/

Workshop on Partially Known Matrices and Operators

The present state of knowledge on the study of eigenvalues and other properties of matrices when only part of the entries are known will be discussed. Applications of this kind of problems to Systems Theory, extensions to operators in infinite dimensional spaces and the use of techniques from Combinatorics and Algebraic Combinatorics will also be discussed.

Several experts in the field will be present.

Organizers
Fernando C. Silva, University of Lisbon;
António Leal Duarte, University of Coimbra;
Isabel Cabral, New University of Lisbon;
Susana Furtado, University of Oporto.

Date

3 days in September 2000.

Structure

12 invited 1-hour talks and some contributed 20-minute talks.

Support

Centro de Estruturas Lineares e Combinatórias

Centro de Matemática da Univ. de Coimbra

Fundação para a Ciência e Tecnologia

Programme for 2001

At the meeting on 1st April 2000 the Scientific Council of CIM approved the following events for 2001:

Thematic Term on Semigroups, Algorithms, Automata and Languages

Organizers

Gracinda M. S. Gomes (University of Lisbon; CAUL).

Jean-Eric Pin (University of Paris VII; CNRS).

Pedro V. Silva (University of Oporto; CMUP).

Dates

May, June and July 2001.

Aims and broad structure

The activities to be developed include simultaneous visits by various specialists of the areas to which the thematic term is dedicated, with the purpose of developing joint research work and collaborate in the workshops and schools to be held.

The programme will include three schools and two workshops dedicated to specific areas considered presently to

have great importance to the study of semigroups, algorithms, automata and languages. These areas were selected considering their huge recent development, motivation from other fields of mathematics and computer science, and their potential applications.

This initiative is mainly directed to young university graduates in these areas, including Portuguese as well as foreign researchers. The courses should be viewed as post-graduation courses.

It is expected, on one hand, to strengthen the already established research in semigroups and languages in Portugal, and, on the other hand, to develop links with related areas such as theoretical computer science, computational algebra, logic and geometry.

Calendar

1-15 May: School on Algorithmic aspects of the theory of semigroups and its applications.

1-7 June: School on Automata and languages

8-10 June: Workshop on Logic, profinite topology and semigroups

1-7 July: School on Semigroups and applications

8-10 July: Workshop on Presentations and Geometry

Short Course on Analytical and Numerical Methods in Non-Newtonian Fluid Mechanics

Organizers

E. Vaz (University of Minho).

J. Maia (University of Minho).

K. Walters (University of Wales Aberystwyth).

Dates

July 2-8, 2001.

Aims

Despite its relevance to a wide number of industries, Rheology and Non-Newtonian Fluid Mechanics are subjects that are often viewed as being of prohibitive complexity to newcomers to the field and have often not been used to the fullest possible extent. The aim of the School is, therefore, to interest young researchers into the field by helping to bridge the gap between the available theoretical tools and existing problems of a mathematical nature in industry and academia.

Advanced School on Recent Developments in Large-Scale Scientific Computing

Organizers

Filomena Dias d'Almeida (University of Oporto).

Paulo Beleza de Vasconcelos (University of Oporto).

Dates

July 2001.

Aims

Modern industrial and social sciences applications involve large scale problems that need the solution of large linear systems or large eigenvalue problems. The school is aimed at presenting the state-of-the-art methods and tools to solve such large scale linear problems. The dimension of the systems requires the use of parallel processing and non-stationary iterative methods or alternatively direct methods with sparse techniques. Message passing software, parallel processing paradigms and libraries will also be presented.

Workshop on Electronic Media in Mathematics

Organizers

F. Miguel Dionísio (Inst. Sup. Técnico, Lisbon; CMA).

José Carlos Teixeira (University of Coimbra).

Bernd Wegner (Technische Universität Berlin).

Dates

September 13-15, 2001.

Aims

The workshop will provide an open forum for the exchange of information and presentations on electronic media in Mathematics for mathematicians and people using mathematics in applications. Three main subject areas are to be covered:

a) *Computational devices for mathematics*: Mathematica, Maple and other general software packages, special packages in numerical mathematics, computational algebra, computational geometry, proof theory and their applications in mathematical research, support for teaching mathematics, support for applications of mathematics in industry.

b) *Visualization and applications of CAD*: visualization of geometric and physical objects, animation software, CAD-package and geometric construction.

c) *Electronic information and communication*: electronic publishing, preprint-servers and preprint databases, electronic document delivery, electronic access to software, literature data bases, organization of information in the web.

Workshop – From Brownian Motion to Infinite Dimensional Analysis

Organizers

A. B. Cruzeiro (University of Lisbon).

L. Streit (University of Bielefeld).

Dates

September 2001.

Aims

The need for the development of infinite dimensional Analysis on spaces of continuous paths or of less regular objects such as distributions has become evident mainly by physical motivations (e.g. Quantum Mechanics and Quantum Field Theory). These spaces are endowed with probability measures, one of the more regular cases being the law of Brownian motion. In this case Itô calculus provides the underlying techniques to manipulate irregular functionals of the paths and the corresponding infinite dimensional Analysis has developed intensively in the past recent decades giving rise to important results in Mathematics, but also applications outside the initial framework (e.g., Filtering and Control Theory, Financial Mathematics). More recently, special attention has been given to the geometry of (curved) spaces. The goal of the workshop is to bring together various approaches to infinite dimensional Analysis.