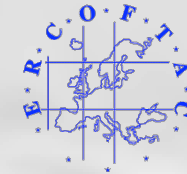




Contact information

For more information interested candidates are urged to consult the website <http://www.unibw.de/lrt1/sesterhenn-en/lehre-en/RS> or contact Prof. J. Sesterhenn at joern.sesterhenn@unibw.de



European Research Community
On
Flow, Turbulence
And
Combustion

2nd YOUNG ERCOFTAC WORKSHOP Model Reduction



Montestigliano, Italy
10.-14. March 2008

Social program



Participants will be requested to organize small social outings. The surroundings abound with possibilities for outdoor, nature, cultural or culinary activities.

Publication

Each participant is expected to submit a report of his research activities including immediate results from the workshop. Representative reports will be published in the ERCOFTAC bulletin. Furthermore, research publications that benefitted from the Young ERCOFTAC Fellowship ought to acknowledge participation in this workshop, and a copy of it should be provided for the Young ERCOFTAC archive.

SCHEDULE

| Dates | Activity |
|-----------------|------------------------------------|
| Feb, 2008 | Preparation for workshop |
| Mar 9, 2008 | Arrival of participants |
| Mar 10-14, 2008 | Workshop |
| April 15, 2008 | Deadline for submission of reports |
| September 2008 | Publication of workshop reports |

Interested candidates should send their application as soon as possible to joern.sesterhenn@unibw.de

A new initiative to attract and support young researchers in the field of flow, turbulence and combustion was launched by ERCOFTAC in 2007. It is geared toward young doctoral students and aims at exposing them to new and interesting topics at the leading edge of scientific research and at introducing them to the activities of ERCOFTAC. The workshop is open to all doctoral students with a keen interest in the specific topic of the workshop. Sixteen participants will be invited and given full support beyond the cost of travel. Active involvement, close mentoring and tutorial presentations by invited guest speakers will be offered to ensure a lasting impact on the participants' doctoral research.

Scientific program 2008: Model Reduction

As simulations of complex fluid flow in increasingly realistic geometries are becoming more and more common, the standard algorithms to analyze the flow quickly reach their limit of convergence and efficiency. To counter this trend, iterative schemes applied to large-scale simulations have been developed to extract relevant information from the fluid flow. These schemes rely on an approximation of familiar concepts such as spectra or transfer functions to assess the flow as to its stability and response behavior. Alternatively, efforts to reduce the large-scale flow simulations to equivalent dynamical system of significantly reduced size have emerged and have led to efficient algorithms. These algorithms are known as model reduction algorithms.

In this Second Young ERCOFTAC workshop we will introduce young scientists to the underlying principles of model reduction. Guest scientists will give introductory tutorials and supervise model reduction projects tied to each participant's research interests.

$$C\dot{x} + Kx = Fu$$
$$v^T C v z + v^T K v z = v^T F u$$

Guest scientists for the Second Young ERCOFTAC workshop will be Prof. Peter Schmid (Ecole Polytechnique) and Dr. Francois Gallaire (Universite de Nice).

Format

Participants will work with simple simulation routines supplied at the workshop.

The workshop will provide a unique and stimulating environment where basic issues of model reduction will be investigated in an exploratory setting. The purpose of the workshop is to expose doctoral students to the principles of model reduction, to experiment with provided codes, and instigate the use of model reduction algorithms in their own doctoral research.

Application and Selection Procedure

Up to sixteen first- or second-year doctoral students in the central disciplines of ERCOFTAC will be openly selected to participate in the workshop. Applications involve a curriculum vitae, a detailed description of the candidate's research interests, and a letter of recommendation from their doctoral advisor. In particular, the relevance of model reduction to the research project has to be clearly outlined in form of a brief proposal. Invitations to the workshop will be issued on a competitive basis by a panel review involving the organizers and the guest speakers.

Financial support

Invited participants will receive a Young ERCOFTAC Fellowship (sponsored by ERCOFTAC) which will cover registration fees, room and board. Travel costs have to be carried by the home institute of each participant or by external sources.

Workshop venue



The workshop will take place at the picturesque estate of Montestigliano in the heart of Tuscany. Montestigliano is composed of a group of 18th century houses and farm buildings which have been carefully restored to retain the original features common to Tuscan architecture. Located 15 km southwest of Siena, it provides a stunning landscape and a stimulating environment for intensive work and relaxation alike.

