EUROMECH
European Mechanics Society

Newsletter 4
February 1995

PRESIDENT'S INTRODUCTION

First of all, a very warm expression of thanks to all who have contributed to the recent development of EUROMECH . *We now have more than 600 Individual Members, and I continue to receive applications for membership almost every day. We have successfully concluded negotiations for the recognition as Affiliated Organizations of GAMM, and now of AUM (Association Universitaire de Mécanique) representing the bodies responsible for mechanics in France, and will in 1995 conclude affiliation arrangements with several other national and transnational bodies and societies including AIMETA in Italy.*

Our first elections of the EUROMECH *Council have been conducted under the watchful eye of the Treasurer, E.-A. Müller, whose report on the outcome of the elections is given on page 3. On behalf of all members of* EUROMECH *I would like to thank all those who agreed to stand for election; to congratulate those who have been elected and to thank them in advance for a great deal of hard work they will have to put in; and to record appreciation to those who were not elected this time, with the hope that they will continue to work in support of our organization.*

In this Newsletter 4, the Treasurer gives details of the Individual and Institutional Membership fees for 1995. Membership through Affiliated Organizations will become increasingly possible as time goes on and members of Affiliated Organizations will receive from them details of the supplementary fee for membership of EUROMECH . *This Newsletter also gives an Announcement for all the* EUROMECH *Colloquia taking place in 1995, so that members can see a little more of the scope of these Colloquia than is possible from the listing of titles, Chairmen and dates given in Newsletter 3. We shall in future try to publish these one-page Announcements in a Newsletter as soon as possible after approval of the Colloquia by the* EUROMECH *Council.*

Finally, can I draw your attention to the Membership Application Form at the back of this Newsletter? Newsletter 4 is being sent free to all Members of EUROMECH *and to those who pay the* EUROMECH *registration fee at Colloquia in 1995, but we hope that you will make this Newsletter available to colleagues and encourage them to use the Form to take out Membership of* EUROMECH .

Newsletter 5 will appear in May, after the April Council meeting at which Colloquia for 1996 will be approved. Please let me have suggestions for information you would like publicized or topics you would like to see covered in future Newsletters.

D.G. Crighton
President, EUROMECH

EUROMECH Newsletter 4

Contents

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Elections to EUROMECH Council: Treasurer's Report

I give notice that in the Elections to the EUROMECH Council, 281 voting papers were received by the closing date from the 598 Members of EUROMECH. According to Statutes Article X (see Newsletter 2, p. 5), the Election was therefore valid, more than one-third of the Members having cast valid votes.

I declare the following to be elected to Membership of the Council for a 3-year term from 1 January 1995 (votes cast given in brackets after each name):
D.G. Crighton, U.K., President (238); B. Lundberg, Sweden, Secretary-General (232); E.-A. Müller, Germany, Treasurer (249); R. Dvorák, Czech Republic (138); G. Maier, Italy (141); and I declare the following to be elected to Membership of the Council for a 6-year term from 1 January 1995:
J. Lemaitre, France (137); P.A. Monkewitz, Switzerland (134); E.J. Hopfinger, France (125); T.J. Pedley, U.K. (151); J. Engelbrecht, Estonia (138).

In addition to these Elected Members, the Council will have the following as Members through their positions as Chairmen of the major standing committees of EUROMECH: F.T.M. Nieuwstadt, The Netherlands, Turbulence Conference Committee; F.R. Pfeiffer, Germany, Nonlinear Oscillations Conference Committee; N. Jones, U.K., Solid Mechanics Conference Committee; H.H. Fernholz, Germany, Fluid Mechanics Conference Committee.

L. van Wijngaarden, The Netherlands, President of IUTAM, is the IUTAM Observer on the Council; and the Council may co-opt up to 3 further Members to improve the subject and geographical balance on the Council.

E.-A. Müller, Treasurer

Fees for Membership of EUROMECH, 1995

The Treasurer gives notice that the membership fees for EUROMECH for 1995 are as follows:
Individual Member: US $30 or DM 50
Institutional Member: US $60 or DM 100.
Fees for Joint Membership via Affiliated Organizations vary from one organization to another, reflecting special arrangements negotiated between these organizations and EUROMECH. GAMM and AUM are at present the only recognized Affiliated Organizations, and members of GAMM and AUM should make enquiries about the EUROMECH Membership Fee through the Treasurers of GAMM and AUM.

In all cases, Members are asked to transmit their fees in such a way that EUROMECH receives the full amount, with no bank charges. Use of Eurocheques is the most convenient way of ensuring this.

E.-A. Müller, Treasurer

EUROMECH Colloquia in 1995

The EUROMECH Council has overall responsibility for EUROMECH Colloquia and EUROMECH Conferences. The latter comprise the European Solid Mechanics Conference, the European Fluid Mecanics Conference, the European Turbulence Conference and the European Nonlinear Oscillations Conference. Fifteen Colloquia, but no Conferences, will take place in 1995.

EUROMECH Colloquia are informal meetings on specialized research topics. Participation is restricted to a small number of European research workers actively engaged in the field of each Colloquium. The organization of each Colloquium, including the selection of participants for invitation, is entrusted to a Chairman. Proceedings are not normally published. **Those who are interested in taking part in a Colloquium should write directly to the appropriate Chairman.** In the following pages we give the latest Announcements, as at mid-February 1995, for each Colloquium in 1995, and an advance notice for a Colloquium in 1996.

EUROMECH- COLLOQUIUM NO. 329
ON METHODS FOR NONLINEAR STOCHASTIC STRUCTURAL DYNAMICS

to be held in Innsbruck/Igls, Austria
March 13 - 17, 1995

This meeting is concerned with problems of nonlinear stochastic structural dynamics and addresses issues concerning theoretical developments and applications. Topics such as Stationarity and Non-Stationarity, Non-Gaussian Properties, Simulation, Stochastic Linearization, Parameter Uncertainties, Comparative Studies, Chaos, Stochastic Stability, Duffing-Oscillator, Reliability, Waves in Random Media, Systems Identification, Wind & Hydraulic Problems, Earthquake Problems and Structural Control will be discussed. In total 49 presentations will be given by authors from 12 European Countries as well as from representatives from overseas such as the United States and Japan. Each technical presentation is scheduled for 30 minutes which provides ample time for indepth discussions.

One of the highlights of the meeting is a Panel Discussion on the main theme of the conference chaired by the founder of the notion i.e. expression of Stochastic Structural Dynamics, Prof. *Y.K. Lin*. The Panel will consist of renowned scholars and researchers such as *V.V. Bolotin*, Russia, *M. Hoshiya*, Japan, *W.D. Iwan*, United States, *A. Naess*, Norway and *W. Wedig*, Germany and others.

The audience is expected to be a happy mix between well established scientists as well as young researchers. Great efforts have been made to make the participation of scientist from the former eastern block countries feasible. In this context the generous support from various Austrian Companies as well as Government Agencies and, last not least, the University of Innsbruck should be mentioned.

The meeting will be held in the smaller Meeting Center of Congress Innsbruck located in the resort village of Igls close by the city of Innsbruck.

The planned social program will provide the opportunity for the participants to exchange ideas on research problems also outside of the meeting hall.

The Colloquium is chaired by Prof. *G.I. Schuëller*, Director of the Institute of Engineering Mechanics of the Leopold-Franzens-Universität Innsbruck.

Administrative matters are handled by the secretariat of the institute.

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EUROMECH

EUROPEAN MECHANICS SOCIETY

Chairman: RNDr Pavel Jonáš, DrSc
Institute of Thermomechnics
Academy of Sciences of the Czech Rep.

Co-Chairman: Prof. Ing. Ferruccio Pittaluga,
Instituto di Macchine e Sistemi Energetici
Universita di Genova

EUROMECH Colloquium 330

"Laminar / Turbulent Transition of Boundary Layer Influenced by Free-Stream Disturbances"

10-12 April, 1995 - Institute of Thermomechanics AS CR, Prague

Last Call for Papers

The onset and development of laminar-turbulent transition in boundary layers under free-stream with velocity disturbances of different kind are not well understood yet and the current prediction methods are not quite reliable. The reason is that different kinds of the disturbances guide to various paths to turbulence. Therefore there are carried out investigations to identify the crucial paths in by-pass transition.

The main aim of the Colloquium is to stimulate the exchange of ideas and results on physics of the phenomena, on mathematical aspects and on empirical legalities of the laminar-turbulent transition of 2D and 3D-boundary layers in free-streams with various disturbances.

The Colloquium will be focused on the experiments as well as on the turbulence models referring to:

- the receptivity to the free-stream turbulence, to the deterministic free-stream disturbances and to their superposition;
- to the detection methods effective to determine the important phases and processes in by-pass transition;
- to the role of the experimental facility in the transition experiments.

Correspondence dealing with the above mentioned topics especially summaries of the planned contributions should be addressed to the Colloquium Secretary Mrs.Plavcová.

The number of participants will be limited to about 50.

Colloquium Secretary: Mrs. Hana Plavcová,
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Czech Republic

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EUROMECH - European Mechanics Society

FLOWS WITH PHASE TRANSITION

EUROMECH Colloquium 331
Göttingen, 14 - 17 March 1995
co-chaired by
G.E.A. Meier, G.H. Schnerr and J. Zierep

General Information

The EUROMECH Colloquium 331 will be held on March 14 - 17, 1995 in Göttingen, Germany, on "Flows with Phase Transition". Please note, that it has been necessary to shift the time during which the colloquium takes place by one day.

The aim of the colloquium is to review work in progress in areas such as "nonequilibrium phase transition", "film condensation", "vapour bubbles", "modelling of two-phase flows" and "droplets and sprays". Both, theoretical and experimental work is considered.

Hotel Accommodation

An accommodation list of Göttingen and a reservation card is included with this letter. Hotels of different categories can be booked by returning the reservation card to the "Fremdenverkehrsverein", either by mail or by Fax (no.: + 49 551 400-2998) before February, 20th 1995. The Fremdenverkehrsverein will confirm the room reservation.

Venue of the Colloquium

The colloquium will be held in the Lecture Hall, building 8, on the site of the Deutsche Forschungsanstalt für Luft- und Raumfahrt (DLR), Bunsenstrasse 10, 37073 Göttingen. There will be sufficient amount of parking space for those arriving by car. There will also be signs directing you from the main gate to the meeting site. The main gate is within walking distance from the Old Town of Göttingen.

The reception accompanying the registration on Monday, 13th, 1995 (4 h p.m. to 8 h p.m.) takes place on the first floor of the canteen building.

Technical programme

About 50 authors responded positively to the first Call for Papers. The final programme, however, will be prepared only after we obtain the Final Registration Forms.

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EUROPEAN MECHANICS SOCIETY

EUROMECH COLLOQUIUM 332 - DRAG REDUCTION
(9th European Drag Reduction Meeting)

Università di Napoli Federico II - Dipartimento di Progettazione Aeronautica
Ravello (Italy), 19-21 April, 1995

Chairman: Prof. P. Luchini, Politecnico di Milano
Co-chairman: Dr. D. W. Bechert, Technische Universität Berlin

Second Announcement

Following the eight European Drag Reduction Meetings held at Lausanne (CH), London (GB), Châtillon (F), Lausanne, Teddington (GB), Eindhoven (NL), Berlin (D) and Lausanne, a EUROMECH Colloquium on Drag Reduction is being organized by the University of Naples Federico II in the scenic village of Ravello, near Naples in Italy, with the contribution of COMETT II through the ERCOFTAC Drag Reduction SIG, of C.I.R.A. (Centro Italiano di Ricerche Aerospaziali), and of E.P.T. (Ente Provinciale del Turismo) Salerno.

Scope of the Euromech Colloquium 332 - Drag Reduction
The scope of the Colloquium encompasses the mechanisms and devices through which the structure of turbulence can be manipulated to the end of reducing the drag caused by internal or external turbulent flow, e.g. riblets, compliant walls and the modification of the rheological properties of the fluid. Papers will be presented on the theoretical and experimental understanding of drag reduction devices, as well as on ways of overcoming the practical difficulties associated with real-world applications. Emerging new methods and combinations will also be discussed. 3 invited lectures (shared with the Workshop on Active Control for Turbulent Drag Reduction) and about 40 contributed papers are programmed over a span of 2½ days, from Wednesday 19th of April to Friday 21st morning, covering a wide range of drag reduction techniques.

Workshop on Active Control for Turbulent Drag Reduction
On Friday 21st afternoon a workshop on Active Control for Turbulent Drag Reduction will take place, chaired by the coordinator of the ERCOFTAC Drag Reduction SIG Dr. K.-S. Choi. Euromech 332 participants are welcome as observers.

Participation and attendance. EUROMECH membership.
A registration fee of 150.000 Italian lire will be payable in cash upon arrival. According to new EUROMECH regulations, the registration fee is reduced to 80.000 lire upon presentation of a valid 1995 EUROMECH membership card. To become a member of EUROMECH please contact the Treasurer of EUROMECH Prof. E. A. Müller - Max-Planck-Institut für Strömungsforschung - Busenstrasse 10 - D37073 Göttingen - Germany, FAX +49-551-7092595.

Conference site

Ravello is a small village located in charming surroundings on a hill looking upon the Costiera Amalfitana sea, and is a renowned holiday location for its resting atmosphere and unforgettable views, and for its open-air concerts. The village is small enough that all the hotels are at walking distance from Piazza Duomo, the central square were the bus stop and the Tourist Office are located. The lectures will be given in the "Cappella sconsacrata dell'Annunziata", a former church at walking distance from the centre of Ravello.

Travel

By train: alight at Salerno train station, then take a bus to Amalfi (1 hour, frequent departures). A smaller bus links Amalfi to Ravello, which is just on top of the hill looking upon Amalfi.
By plane: fly to Naples Capodichino airport (there are direct flights from London, Paris, Frankfurt and Bruxelles). Take the bus to Piazza Municipio city terminal and from there a bus to Amalfi (2 hours, starting at 10.00, 14.15, 16.15, 17.15, 18.00). The bus from Naples to Amalfi is not working on Sundays and holidays, except for the 10.00 a.m. ride. On such days you should take either a train or a bus from Naples to Salerno and proceed as indicated above. As an alternative, car rental is available at the airport. It is about an hour's drive from Naples' airport to Ravello.
If your plane stops in Rome (and especially if you are arriving on a Sunday or on Easter Monday), it may be preferable to take a train from Rome to Salerno (3-4 hours) rather than a plane to Naples and then a train from Naples to Salerno.
Instructions on how to reach the lecture hall and registration desk, and other information that may be useful at your arrival in Ravello, shall be posted by the Tourist Office in Piazza Duomo since Tuesday.

Accomodation

Participants should reserve their accomodation directly with the hotels in Ravello, a list of which is enclosed. Early reservation is recommended. Please contact the hotel by FAX or telephone as soon as you receive this announcement. Additional information may be obtained from the Ravello Tourist Office, Piazza Duomo, Ravello (SA), Italy, Tel. +39-89-857096, FAX +39-89-857977.

Social events

An informal early-bird buffet will be offered on Tuesday 18th at 19.00.
A concert and dinner will be organized on Thursday 20th evening.
A post-conference half-day tour of the Costiera Amalfitana can be arranged for Saturday 22nd if enough people are interested.

Correspondence is to be addressed to:

Professor P. Luchini
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European Mechanics Society EUROMECH COLLOQUIUM 333

GROUND FREEZING
MATHEMATICAL MODELS AND APPLICATIONS

Montecatini. 2–4 June 1995

The Colloquium will start in the morning of Friday June 2nd and will be concluded in the morning of Sunday June 4th (so that PEX/APEX fares are applicable).

Full board accommodation will be provided to all participants at Hotel Belvedere, Viale Fedeli 10, Montecatini Terme, Tel. 0572/70251. The costs will be covered by the Italian Consiglio Nazionale delle Richerche and Gruppo Nazionale per la Fisica Matematica which are gratefully acknowledged. Hotel Belvedere offers *very special rates* ($\sim$ 70 US$ per day full board!!!) for accompanying persons and for possible extension of the stay.

Montecatini Terme is a garden town with an abundance of springs renowned for their therapeutic properties. Charmingly situated in the heart of Tuscany half way between Florence and Pisa, it is dominated from the top of a hill by the ancient village (Montecatini Alta) which can be reached by a characteristic cable car.

With its peaceful and nice atmosphere *fin de siècle* and well equipped for modern conferences it will be an ideal place for EUROMECH 333.

Montecatini is accessible by bus or train from Florence (45 km) and there are train connections with Pisa Airport (50 km). It may be reached by car taking the Autostrada Firenze-Mare.

Even closer than Florence and Pisa are other old and beautiful cities like Pistoia and Lucca.

Chairmen:

M. Primicerio, Dipartimento di Matematica, Università di Firenze

M. Frémond, Laboratoire Central des Ponts et Chaussées, Paris

Mailing address:

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Professeur Patrice HAMELIN

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Chairmen of the Colloquium

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W.P. De WILDE
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Previsional International Scientific Committee

J. Bauerle, Germany
J. I. De Llorens, Spain
L. Gründig, Germany
Y. Marshall, UK
M. Mollaert, Belgium
B.H.V. Topping, UK
A. Torres Marques, Portugal
M. Triantafilou, Greece
Ph. Trompette, France
A. Vautrin, France
G. Verchery, France

Organizing Committee

R.M. Courtade, UCB Lyon I, France
D. Genin, UCB Lyon I, France
G. Nemoz, French Textile Institute, Ecully, France

Registration Conditions

Amount: 1 000 FF (including participation to the Colloquium and lunches)

Spirit of the Colloquium

"The essential features of Euromech Colloquia are that they are specialized in content, small in size and informal in character."
"The cost of holding a Euromech Colloquium should be kept to a minimum."

EUROMECH 334

CALL FOR COMMUNICATIONS

TEXTILE COMPOSITES AND TEXTILE STRUCTURES

LYON

15 - 16 - 17 MAY 1995

University Lyon I

Vrije Universiteit Brussel

Timetable

Those desiring to present a paper are requested to submit two (2) copies of a one-page abstract to the Symposium Secretariat by 15 January 1995.

The authors will receive notification of acceptance of their proposal by 1 February 1995.

Full length manuscripts limited to 8 pages will be required by 15 May 1995.

To answer the expectations of the registered delegates, confirmations of participation will be subsequently required from the authors. Only confirmed presentations will be included in the Final Program and the Proceedings.

Official Languages

English is the official language of the symposium.

Proceedings

The Proceedings of the symposium will be published in english and available after the symposium.

Site of the Symposium

University Lyon I
43, boulevard du 11 Novembre 1918
69622 VILLEURBANNE CEDEX - France

SYMPOSIUM SECRETARIAT:
Caroline Viricel
Laboratoire Mécanique Matériaux (L2M)
Université Lyon I - IUT A - Génie Civil
69622 VILLEURBANNE CEDEX - France

Phone: (33) 78.94.88.97
Fax: (33) 78.94.69.06

Please pass along this announcement or a copy to other individuals that may be interested in submitting an abstract or attending the symposium.

Aim of the Colloquium

The Euromech Colloquium on **"Textile Composites and Textile Structures"** is aimed at confronting different approaches and recent advances in research on the mechanical behavior of composite materials and structures including **textile reinforcements** such as **braided composites, knitted composites and woven fabrics.**

The experimental aspects will be particularly analysed from three points of views: recent methods of identification of anisotropy as far as stiffness and fracture are concerned ; development of efficient strain analysis techniques using, for example, optical measurements and inverse methods likely to improve the treatment and use of experimental data.

The Colloquium is also aimed at modelling textile composite materials and structures:

- Computer aided techniques are utilised in describing the geometrical structure of 2D or 3D textiles reinforcements. They are used for the definition and the identification of unit cell and period to be used for homogenization.
- Numerical methods and specific finite elements (interface, contact, crack) are used to describe local and global mechanisms specific of textile composites (warp-weft interaction ; fiber-matrix delamination ; crack propagation).
- Computer aided design is more and more used to improve the design of structures including textile reinforcements: form finding is efficient for structures loaded by in-plane and flexure loading and for ordinary or exceptional sollicitations (impact for example).

Applications of these methods concern textile reinforced plates or shells, geotextiles and soil reinforcement, cement fiber composites and textile structures.

EUROMECH 334

PREREGISTRATION FORM

Nom/*Name*: .....

Prénom/*First Name*: .....

Société/*Function*: .....

Adresse/*Address*: .....

.....

.....

.....

Téléphone/*Phone*: .....

Fax: .....

Membre Euromech : OUI NON
Euromech's Member: *Yes* *NO*

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J'ai l'intention de / *I intend to*

☐ participer à "Textile Composites & Textile Structures"
participate to "Textile Composites & Textile Structures"

☐ présenter une communication
present a paper

☐ Oral ☐ Poster
☐ Résumé joint / *Abstract enclosed*
(par courrier ou fax/*by mail or fax*)

Titre provisoire/*Tentative title*: .....

.....

EUROMECH

EUROPEAN MECHANICS SOCIETY

EUROMECH Colloquium 335

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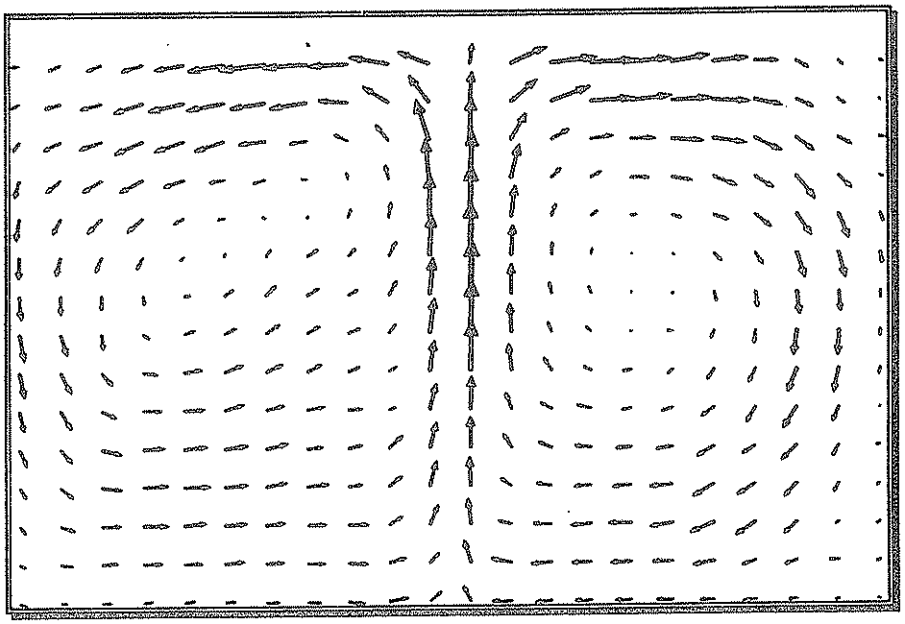
"Image techniques and analysis in fluid dynamics"

5-7 June 1995 - Facolta' di Ingegneria, Roma



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Scientific scope of the Colloquium

The development of multi-point measurement techniques has recently been very rapid. High resolution cameras, fast and capable devices allow one to obtain a detailed spatial and temporal description of the flow field (including the vorticity field). A large number of flow images can be memorized and processed to obtain statistical quantities with confidence intervals similar to those of LDA or HW techniques.

Flow visualization, traditionally used as a qualitative tool, has been developed into a variety of quantitative methods. The so called Particle Image Velocimetry (PIV) allows to measure velocity fields by using correlation or FFT algorithms or by tracking each tracer along its path (Particle Tracking Velocimetry PTV). Several new ideas have extended the classical 2-D PIV method to 3-D measurements (3D PTV, Holography and Tomography). Moreover the use of pulsed light and/or colour allows to determine the velocity direction. By using such implementations of PIV both dynamical and angular ranges may reach values similar to those obtained by LDA techniques.

Particular devices are available to measure temperature fields. In particular tracers emitting light at wavelenghts dependent on their temperature (Liquid Crystals) or infrared videocameras (Thermography) are used to detect local temperature values and gradients.

The proposed meeting, which follows a previous Euromech Colloquium on the same subject held in Delft (1992), is aimed at ascertaining the state of the art on the applications of the above recently developed techniques to Fluid Mechanics.

Main topics

The Colloquium will be focused on experiments as well as on basic principles of the following topics:

- Particle Image Velocimetry (Correlation and Tracking techniques)
- Liquid Crystals techniques
- Thermography
- Laser Induced Fluorescence
- Holography
- Tomography
- Doppler Global
- Flow Visualization

Date and location

The Colloquium organized by Universita' di Roma "La Sapienza", will be held from June 5th to June 7th, 1995 in the Facolta' di Ingegneria, Via Eudossiana 18, 00184 Roma, ITALY. The place is just at the centre of the historical part of Roma within walking distance from many Hotels of different categories (a list will be provided in the secound announcement).

Colloquium Chairman:
Professor Helge I. Andersson
Applied Mechanics
The Norwegian Institute of Technology
N-7034 Trondheim, Norway

SECOND ANNOUNCEMENT

Flows dominated by centrifugal and Coriolis forces

The Norwegian Institute of Technology
University of Trondheim, Norway
21 - 23 June 1995

The 336th EUROMECH Colloquium will be held in Trondheim under the auspices of the European Mechanics Society. The Colloquium will provide an opportunity for European scientists active in geophysical and engineering fluid mechanics to present and discuss their latest research on the effects of centrifugal and Coriolis forces on inviscid, viscous and turbulent fluid motion. Theoretical, experimental and numerical studies are equally welcome, provided the focus is on the fluid dynamical aspects of the influence of these body forces. The approaches may include · stability analysis and Rapid Distortion Theory, flow visualizations and modern measurement techniques, two-point closures and second-moment modelling, and computer simulations (Direct and Large-Eddy Simulations). Industrial applications are particularly welcome.

The Colloquium can be considered a follow-up of the earlier colloquia no. 245 on "The effect of background rotation on fluid motions" held in Cambridge in April 1989 and no. 288 on "Turbulent flows undergoing distortion and rotation" which took place in Lyon in April 1992. The topics of this Colloquium include:

- Turbulence in rotating and curved flows
- The influence of curvature and rotation on shear flows
- Vortex dynamics in rotating systems
- Instabilities arising from streamline curvature or system rotation
- Fluid mechanics of rotating machinery

The First Announcement has been met with favourable response from the European fluid mechanics community, and this Second Announcement is sent primarily to those who responded positively. Abstracts of maximum 2 pages of prospective contributions are solicited before 15 January 1995. The abstracts of the accepted presentations will be printed as submitted in a booklet and made available to the participants at the beginning of the Colloquium. The name(s) of the author(s) and their institution(s) should therefore appear beneath the title of the abstract, and inclusion of some major figures and principal references are encouraged. Notification of acceptance and a formal invitation will be mailed by 15 February 1995, together with further details about the Colloquium.

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EUROPEAN MECHANICS SOCIETY

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Co-Chairman
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econd announcement

ear Colleague,

ne EUROMECH 337 Colloquium: "Plastic flow instabilities at high rates of strain" will be held at the University of Metz, 1 10-13 July, 1995. Its objective is to provide opportunities for European scientists currently active in the field, as well as r a few scientists from outside Europe, to meet each other and to informally discuss their research activities.

ne Colloquium will be focused on phenomena such as Shear Localization, Dynamic Fracture (spalling, fragmentation), and eir applications to the Penetration and Perforation of Solids, Shaped Charge phenomena, Machining and Metal forming, stabilities in Explosives; not only will conventional materials, such as steels and other alloys be considered, but so will odern materials: metal matrix and polymer matrix composites as well as ceramics.

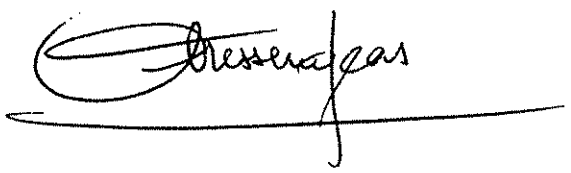
r DODD and I are pleased to invite you to participate, and to present your current work at the Colloquium; I am sure your luable contribution will help to enhance the success of this meeting.

you have not already replied to the first announcement please return your favorable response and a one-page abstract as soon possible and in any case before February 28, 1995. You may respond by e-mail, fax or telephone at your convenience.

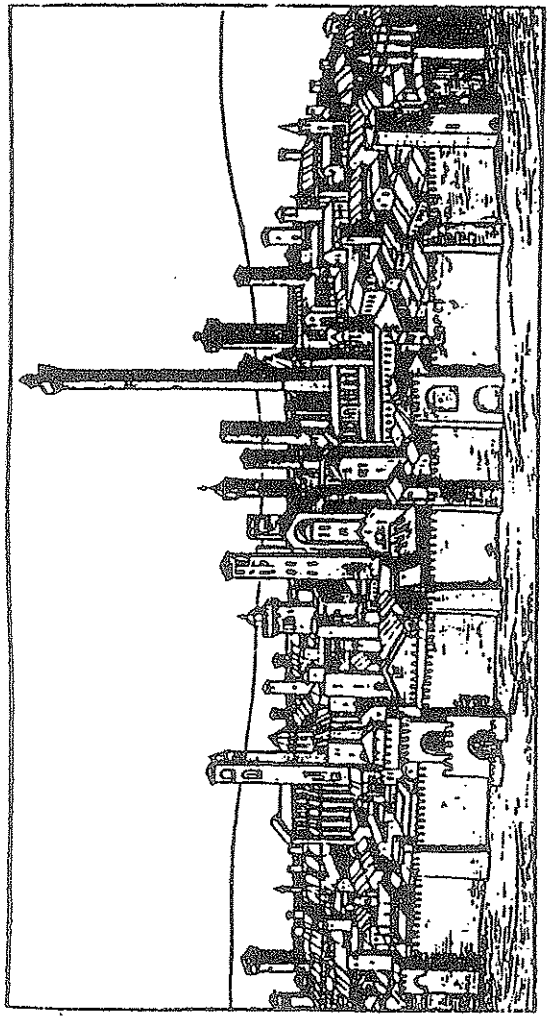
s usual in EUROMECH Colloquia, only a small contribution will be requested from participants to cover organizing penses. Participants are mostly expected to find their own travel and subsistence expenses. At reception of your acceptance, a ailing will give you all the necessary details on registration, hotel reservations and Colloquium venue.

Best regards.

Sincerely,



Claude FRESSENGEAS



EUROMECH

EUROPEAN MECHANICS SOCIETY

EUROMECH COLLOQUIUM 338

Atmospheric Turbulence and Dispersion in Complex Terrain

September 4 - 6, 1995
Bologna (Italy)

17

EUROPEAN RESEARCH COMMUNITY ON FLOW, TURBULENCE AND COMBUSTION

ERCOFTAC WORKSHOP

Data on Turbulence and Dispersion in Complex Atmospheric Flows

September 7, 1995
Bologna (Italy)

FIRST ANNOUNCEMENT AND CALL FOR PAPERS

EUROMECH COLLOQUIUM 338

There is a small series of EUROMECH Colloquia on the subject *Atmospheric Boundary Layers over Complex Terrain*, and the last was held in 1990. Since that time, new measurements have been made available, large eddy simulations have been proposed, and an increasing number of numerical models based on various closures have been designed and used for applicative purposes.

The scientific scope of this Euromech Colloquium 338 is the assessment of the present knowledge on the features of atmospheric boundary layer turbulence on complex terrain and on its modelling, having in mind applications to local climate, weather predictions, pollution modelling and others.

The following topics will be discussed during the Colloquium:

- measurements and models for the probability density function of atmospheric flow parameters (say, velocity components, temperature, pressure), with special concern to diabatic conditions;
- models for predictions of the first moments (mean flow and fluxes, for instance, but also higher order moments, like skewness and kurtosis);
- turbulent drag evaluations;
- dispersion and deposition of passive tracers.

Prospective participants and contributors are invited to fill in and send the registration form in order to receive the Second Announcement with further information. There will be the possibility to ask for some financial support, for which a request is to be addressed as soon as possible.

An abstract of the proposed contribution has to be sent to the Chairman before **31 March 1995.**

ERCOFTAC WORKSHOP

The development of ideas and models about the behaviour of the atmospheric turbulent boundary layer over complex terrain, with special reference to the dispersion and deposition problems, requires new and accurate measurements both for new formulations and for testing the models. This Workshop aims to settle the state of the art, on the line of the ERCOFTAC Workshop on data and modelling mean flow over topography, held in Bologna in 1990.

The Workshop will follow the EUROMECH Colloquium 338.

Contributions on new data sets, both from laboratory and field experiments, are welcomed, as well as critical discussions on data sets already available and experiences on testing models.

Outgrows of the Workshop could be:

- suggestions for new measurements;
- choice of some data sets to be recommended for comparison among models of dispersion in complex terrain

Prospective participants and contributors are invited to contact the Chairman in order to receive the Second Announcement with further information. There will be the possibility to ask for some financial support, for which a request is to be addressed as soon as possible.

An abstract of the proposed contribution has to be sent to the Chairman before **31 March 1995.**

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Announcement and call for papers

EUROMECH 339

Internal waves, turbulence and mixing in stratified flows

Ecole Normale Supérieure de Lyon
Lyon, France
6-8 september 1995

The purpose of this informal Colloquium is to gather the scientific community working on internal waves, stratified turbulence, and induced mixing. This community involves scientists concerned with either fundamental fluid dynamics, or natural systems (atmosphere, oceans, star interiors), or engineering flows. There is a need to compare the different approaches and results, and to identify the most important problems that should be solved in the near future. Contributions on comparisons between theoretical results, field measurements, laboratory and numerical experiments are invited on the following topics:

-Dynamics of internal waves, non linear effects and breaking.

-Influence of a stable stratification on a turbulent flow; collapse; emission of internal waves by a stratified turbulent flow.

-Statistical properties of interacting internal waves and of stratified turbulence.

-Mixing of mass and momentum.

-Turbulence models for stratified flows.

-Decompositions into waves and vortices; interactions between waves and vortices.

-Specific properties of internal waves in natural media: atmosphere, oceans, star interiors.

Attendance is limited to about 60 scientists. If you are interested in participating and/or presenting a paper, please complete and return the enclosed reply before December 31, 1994.

Prospective participants are invited to submit a two-page abstract before April 1, 1995.

Mail abstracts to the chairman:

C. Staquet - Euromech 339
Laboratoire de Physique
Ecole Normale Supérieure de Lyon
46 allée d'Italie
69364 Lyon Cédex 07
France

Notification of acceptance together with further information will be sent out by May 15, 1995. A booklet of the abstracts will be distributed at the Colloquium.

Financial support has been requested from various organizations. So far IFREMER, EDF and SHOM have agreed to support the Colloquium. A part of the funding will be reserved for scientists from Eastern European countries. Grants for graduate students may also be available.

EUROMECH ERCOFTAC

EUROPEAN MECHANICS SOCIETY
EUROMECH COLLOQUIUM 340

Statistical properties of turbulent gaseous flames

August 30 - September 1, 1995

Hosted by J.M. Burgers Centre for Fluid Mechanics
Delft University of Technology
Delft, the Netherlands

(second announcement)

Scope
In the colloquium measurements and predictions of the statistical properties of turbulent gaseous flames will be compared. The focus will be on concepts considered adequate to describe interactions between turbulent mixing and combustion reactions, in particular the joint probability density function (PDF) of velocities and scalars.
The PDF forms an attractive and challenging starting point for predictive models for mean and fluctuating flame properties. It can be measured by advanced laser diagnostic methods. Applications of PDF methods in industrial applications, with comparison between calculations and experiments are also welcomed.

Topics
Experimentalists and modellers will present data on the joint PDF of components of velocity, temperature and concentrations or on the marginal PDF of a subset of these variables. Studies describing new theoretical methods for the modeling of turbulent reacting flow within the PDF approach will also be presented. The main topics of interest are:

1. Micromixing models, Monte Carlo algorithms
2. Multiscalar assumed shape PDF methods
3. Use of direct numerical simulation to explore the validity of PDF models
4. PDF measurements using advanced laser diagnostic methods (e.g. LDA, PIV, LIF, CARS and combinations of these techniques)
5. statistical aspects of laminar flamelet models, reduced reaction schemes
6. PDF-methods for LES simulations

Chairman
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EUROMECH 341

Smart Structures and Materials

26 - 28 September 1995

Smart Structures and *Materials* is a generic denomination to describe materials and structures which are capable to interact with their environment and respond to internal and external stimulations through sensing, signal processing and actuation. The design of such systems requires the collaboration of several areas, including structural mechanics, material science, control, mathematics, electronics and manufacturing. Smart structures and materials have recently found interesting applications in aerospace, civil engineering, consumer products as well as medecine. New technologies of integrating different materials on a small scale have induced a new concept of structures.

CONFERENCE AIMS

The aim of this colloquium is to discuss the technical advances and applications of smart structures and materials with a particular emphasis on the multidisciplinary aspects. Contributions are particularely welcome in areas of :

. micromechanical systems
. micropositionning
. active and passive suppression of sound and vibration
. shape control
. mathematical modelisation
. adaptative systems

The purpose of this conference is then to obtain a review of the different concepts inherent with Smart Strucutures ans Materials.

EUROMECH 342

AEROTHERMODYNAMICS

Date: Sept. 26-29, 1995

Place: DLR
Bunsenstrasse 10
D-37073 GÖTTINGEN

Chairmen: Dr. G. Eitelberg, Dr. H. Legge, DLR Göttingen/Germany
Prof. Dr. R. Brun, Universite de Provence, Marseille/France

Topics:

Only flows of real and rarefied gases, where the state or composition of the gas changes in the course of the flow, including reactions and relaxation phenomena of internal and external degrees of freedom are summarized as aerothermodynamics for the purpose of this colloquium. The following topics should be considered only at hypersonic high enthalpy, and/or rarefied flows.

1. Kinetic theory applications
2. Numerical methods, Monte Carlo simulations
3. Scaling laws, boundary layers
4. Transport phenomena
5 Gas surface phenomena, catalycity, accommodation coefficients
6. Expansion flows, nozzle flow, free jets, plumes from thrusters
7. Shock waves and shock wave interactions
8. Relaxation processes, reaction rates, dissociation and recombination
9. External flow, heat transfer, pressure and forces
10. Experimental facilities
11. Measurement techniques, intrusive and nonintrusive instrumentation, spectroscopy.

Registration fee is 150 DM + 40 ECU (≈ 80 DM) for non-members of Euromech.
This includes a book of abstracts and lunches.
Participation is by invitation. **Mail this form till February 15, 1995.**

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to
Dr. G. Eitelberg
DLR
Bunsenstrasse 10
D-37073 Göttingen

I would like to have an invitation to

⊗ present a paper with the tentative title

.....
.....
.....

Address: Signature:

.....
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.....

EUROMECH 343
Computerized Symbolic Manipulation in Mechanics

Technical University Hamburg-Harburg, Germany
October 9 – 13, 1995

Chairmen:
E. Kreuzer, Hamburg, Germany; *M. Lesser*, Stockholm, Sweden.

The Colloquium is a forum for engineers and scientists to present and discuss the latest research findings in symbolic manipulation in mechanics. There will be invited lectures as well as contributed presentations.

The Objective of the Colloquium

In applied mathematics and mechanical engineering we normally think of numerical calculations if computers are involved. Although simulations by means of numerical methods are powerful tools for investigations in mechanics, they do have drawbacks, e. g. finite precision, errors generated when evaluating expressions. General global results or proofs of theoretical results cannot be obtained from simulations.

A broader understanding of mechanical phenomena can be gained by means of analytical methods. But even for seemingly simple mathematical models, analytical calculations by paper and pencil may become very time-consuming, may be the source of many errors, and will sometimes be impossible. In such cases, computerized symbolic manipulation is clearly faster as well as safer and therefore preferable. Although notable advances in symbolic computation continue to take place on a broad front, purely symbolical investigations often cannot fulfill all of our needs in mechanics. Therefore, a semi-analytical approach, combining the features of analytical and numerical computations, is a most desirable synthesis. This allows the analytic work to be pushed further before numerical computations start.

The objective of this EUROMECH Colloquium is to present basic concepts, methods and recent applications of computerized symbolic manipulation systems in mechanics.

Call for Contributions

Prospective participants are encouraged to submit an abstract. The lectures last 25 minutes with additional 5 minutes for discussion. The colloquium language will be English. Authors are asked to submit three copies of the abstract of about 500 words (one page DIN A4) *not later than May 31, 1995* to Prof. E. Kreuzer (address see below). If possible, please send the abstract in addition by e-mail to Kreuzer@tu-harburg.d400.de .

Colloquium Location

The colloquium will be held at the Technical University Hamburg-Harburg. The University is an attractive place in the southern part of the Hanseatic City of Hamburg.

Registration

The registration fee is DM 150,– for participants. This fee includes the Reception and the costs for the booklet of abstracts. Accomodation and meals are not included. Participants are asked to organize the accomodation by themselves.

EUROMECH

European Mechanics Society EUROMECH COLLOQUIUM 344

FLUID-STRUCTURE INTERACTIONS IN BIOMECHANICS

Imperial College
London, SW7 **10–13 April 1996**

The meeting will form part of a long-standing series of EUROMECH colloquia on biological fluid mechanics. The emphasis will be on dynamic interactions, in which the fluid loading and wall geometry strongly influence each other. The Colloquium is expected to bring together workers from many areas of physical science, bioengineering, biology and medical science. The subject matter will range widely and will, for example, include studies on the ureters and urethra, and the airways and blood vessels of the lung, as well as the interactions of flowing blood and blood vessel walls which have been the focus of previous EUROMECH Colloquia (e.g. EUROMECH 311 on Blood-Wall Interaction, Berlin 1993).

Scientific content

Possible topics include:

- Passive fluid-structure interactions
  - wall shear stress in elastic arteries
  - venous collapse
  - forced expiration
  - oscillations in collapsible tubes

- Cellular mechanics
  - blood cells
  - endothelial cells
  - glycocalix

- Tissue transport
  - blood vessel walls
  - poroelastic media

- Interactive disease processes
  - atherosclerosis

– thrombosis

An important feature will be the interaction of fluid flow with active boundaries, for example when muscle contractions determine the boundary deformation only when coupled to the hydrodynamic stresses (e.g. peristaltic pumping); or long-term geometric remodelling in response to such stresses.

Administration

Persons interested in attending the colloquium or receiving further information are invited to contact the Chairman or co-Chairman directly, using the attached reply form. Please pass on this notice to anyone who might be interested; we are keen to encourage the participation of younger scientists. Numbers are restricted to approximately 80 so participation will be by invitation only. Would all prospective participants who wish to offer a presentation please let us have a note of the probable topic. There will be poster presentations as well as lectures. Abstracts will be required by 20 November 1995 after which formal invitations will be issued. A second circular describing the abstract format will be mailed in September.

We intend to keep the registration fee low (approx. £60), while still providing the opportunity to support some younger scientists and colleagues from eastern Europe. Present estimates suggest that three night's bed-and-breakfast accommodation at Imperial College, plus most meals (including the colloquium dinner), will come to approximately £145 per head. Additional bed-and-breakfast for the Saturday night would be approximately £30. Full details will be given in the September circular.

Chairman:

Professor T.J. Pedley, Department of Applied Mathematical Studies, The University of Leeds, Leeds, LS2 9JT, U.K.

Co-Chairman:

Prof. C.G. Caro Centre for Medical and Biological Systems, Imperial College of Science, Technology and Medicine, London SW7 2BX, U.K.

Local Organising Committee: Dr M.J. Lever, Dr C.G. Phillips, Prof. R.C. Schroter.

EUROMECH Membership Application Form

I WOULD LIKE TO APPLY FOR MEMBERSHIP OF EUROMECH

Family name/surname

First (given) name

Title (Prof., Dr., etc.)

Position

Work address

Phone Fax

E-mail

Research Interests

EUROMECH meetings you have attended

Names and addresses of two referees whom the Society may consult

Please tick if you are a member of

Signature GAMM ☐ AUM ☐

Please return this form to Prof. D.G. CRIGHTON, D.A.M.T.P., University of Cambridge, Silver Street, Cambridge CB3 9EW, UK.

Please complete this EUROMECH Membership Application Form to maintain your contact with EUROMECH activities!
