

Symposium on
Global Flow Instability and Control
 Sept 23-25, 2001

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Final Programme

Owing to the early departure of a large number of overseas Delegates the Organising Committee has ensured that two sessions of the Symposium, on Monday Sept. 24, will be held on board the [MTS "Minoan Prince"](#) en route to [Santorini](#). An otherwise tight schedule has been planned, to accommodate for the worldwide resonance that the Symposium has found and a strict timetable will be kept. In addition to the planned sessions, Delegates are encouraged to bring along - or prepare on site - additional subjects for discussion to be presented during the discussion period that follow each session. Presentation of such comments are expected to last no more than 3 minutes.

[View/Download the final programme in PDF format here](#)

Saturday, September 22, 2001

15:00-20:00 *Registration*

Sunday, September 23, 2001

07:00-08:15 *Registration*

08:15-08:30 *Welcome and Opening Remarks*

Sunday, September 23, 2001

Flow Instability I

Chair: W. Koch

08:30-09:05

P. Huerre^{f1}

Global instabilities in streamwise developing flows

09:05-09:20

J.-M. Chomaz^{f1}

Nonlinear absolute and convective instabilities, front and nonlinear global mode in open flows

- 09:20-09:35 *A. Bertelrud*^{s1}
Separation and transitional flow around airfoils at Reynolds numbers 40000 to 60000
- 09:35-09:50 *V. Theofilis*^{d1}, *S. J. Sherwin*^{k3} and *T. Colonius*^{s3}
A unifying perspective of linear flow instabilities
- 09:50-10:15 *Discussion of Flow Instability I*
- 10:15-10:45 *Coffee Break*

Flow Control I

Chair: G. Em Karniadakis *

- 10:45-11:20 *I. Wygnanski*^{s5,il}
On the process of controlled separation, reattachment and vortex shedding
- 11:20-11:35 *E. Chalfon*^{il}, *B. Nishri*^{il}, *I. Wygnanski*^{il}, and *A. Seifert*^{il}
Effects of elevated free-stream turbulence on active control of a transitional separation bubble
- 11:35-11:50 *H. F. Fasel*^{s5}, *D. M. Israel*^{s5} and *H.-L. Zhang*^{s5}
Numerical investigation of active control of separated flows
- 11:50-12:05 *W. Jürgens*^{d3} and *H.-J. Kaltenbach*^{d3}
Control of shear-layer transition behind a swept backward-facing step by excitation of oblique instability waves
- 12:05-12:20 *J. Ekaterinaris*^{gr}
Numerical investigations of dynamic stall control
- 12:20-12:45 *Discussion of Flow Control I*
- 13:00-15:00 *Lunch*

Advanced Numerical Methods

Chair: H. Fasel *

- 15:00-15:35 *G. Em Karniadakis*^{s2}
Stability of COIL flows
- 15:35-15:50 *N. Fietier*^{ch} and *M. O. Deville*^{ch}
Particular aspects of the numerical stability analysis of viscoelastic flows
- 15:50-16:05 *I. Goldhirsch*^{il}
Boundary conditions for rarefied gases
- 16:05-16:40 *L. Tuckerman*^{f2}
Bifurcation analysis for time-steppers
- 16:40-17:15 *Discussion of Advanced Numerical Methods*
- 18:00-19:00 *Dinner*
- 19:00-21:00 **Discussion Groups**

Monday, September 24, 2001

08:00-09:00 Breakfast; On-board to Santorini

Flow Instability II

Chair: P. Huerre *

- 09:00-09:35 *D. Barkley*^{k6}
Computations and bifurcations of periodic flows
- 09:35-09:50 *P. Duck*^{k4}

Stability and breakdown in three-dimensional and corner boundary layers

09:50-10:05

S. Hein^{d1} and *V. Theofilis*^{d1}

Instability analysis of three-dimensional vortical flows

10:05-10:30

Discussion of Flow Instability II

11:00-17:00

Free Day In Santorini

Flow Control II

Chair: I. Wygnanski *

18:00-18:15

M. Amitay^{s4}, *M. Horvath*^{s4} and *A. Glezer*^{s4}

Virtual aero-shaping of a Clark-Y airfoil at low angles of attack

18:15-18:30

*O. N. Ramesh*ⁱⁿ and *H. P. Hodson*^{k2}

Transition initiation by unsteadiness and roughness in a high-lift turbine blade: an experimental study

18:30-18:45

B. Uzunoglu^{k5} and *P. B. Nair*^{k5}

Optimal flow control framework for adaptive variable fidelity reduced modelling

18:45-19:00

B. Pier^{k1}

Open-loop control of absolutely unstable domains

19:00-19:25

Discussion of Flow Control II

19:30-20:30

Dinner; On-board from Santorini

22:00-23:00

Discussion Groups

Tuesday, September 25, 2001

Flow Instability III

Chair: D. Barkley *

09:15-09:30

W. Koch^{d1}

On the spatio-temporal stability of primary and secondary crossflow vortices in a three-dimensional boundary layer

09:30-09:45

U. Maucher^{d2}, *U. Rist*^{d2} and *S. Wagner*^{d2}

Observations of an absolute instability in a laminar separation bubble

09:45-10:00

T. Colonius^{s3}, *C. Rowley*^{s3} and *V. Theofilis*^{d1}

Global instabilities and reduced-order models of cavity-flow oscillations

10:00-10:30

Discussion of Flow Instability III

10:30-11:00

Coffe Break

11:00-13:00

Presentation of the Conclusions of the Discussion Groups

13:00-15:00

Lunch

15:00-18:00

Lunch

20:00-23:00

Greek Night at Arolithos

Final Remarks and End of the Symposium

Wednesday, September 26, 2001

Round-Crete Trip (opt)

[top of the page](#) **Authors' Affiliations**

CH

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D

- d1 DLR Institute of Aerodynamics and Flow Technology, Göttingen
- d2 University of Stuttgart, Institute of Aerodynamics and Gasdynamics
- d3 Technische Universität Berlin, Herman-Föttinger-Institut für Strömungsmechanik

F

- f1 Ecole Polytechnique Paris, LadHyX
- f2 CNRS, Laboratoire d'Informatique pour la Mécanique et les Sciences de l'Ingenieur

GR

- gr Foundation for Research and Technology Hellas, Institute of Applied and Computational Mathematics

IL

- il Tel-Aviv University, Department of Fluid Mechanics and Heat Transfer

IN

- in Indian Institute of Science, Department of Aerospace Engineering, Bangalore

UK

- k1 Cambridge University, Department of Applied Mathematics and Theoretical Physics
- k2 Cambridge University, Whittle Laboratory
- k3 Imperial College of Science Technology and Medicine, Department of Aeronautical Engineering
- k4 University of Manchester, Department of Mathematics
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- k6 University of Warwick, Mathematics Interdisciplinary Research

USA

- s1 Analytical Services and Materials
- s2 Brown University, Division of Applied Mathematics
- s3 California Institute of Technology, Department of Mechanical Engineering
- s4 Georgia Institute of Technology, School of Mechanical Engineering
- s5 University of Arizona, Department of Aerospace and Mechanical Engineering

* to be confirmed

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Post-Symposium Activities

The following websites should assist in choosing activities while in Crete:

Santorini	(picture gallery)
www.tournet.gr	(virtual navigator of categorised subjects)
www.interkriti.gr	(board a round-Crete virtual flight)
www.cretantourism.gr	(some useful tourist info)
www.forthnet.gr/internetcity/en-	(east Crete only)

home.htm	
www.crete-region.gr	(Greek only)

On the days following the Symposium, Delegates may wish to join one of the following daily tours. All will depart from the Symposium venue, where tickets can be purchased from, on Sunday, Sep. 23 or Tuesday, Sep. 25. (1 EUR = 340.75 GRD).

Day	Excursion	Departure Time	Cost (GRD)
Wed	Knossos-Museum	8:20	12500
Wed	Festos-Matala	8:30	10000
Wed	Agios Nikolaos-Spinalonga	8:30	10150
Wed	Ag. Nikolaos-Spinalonga-Elunda	8:30	10150
Day	Excursion	Departure Time	Cost (GRD)
Thu	Lasithi plateau	12:50	10300
Thu	Ierapetra-Vai	8:50	10100
Thu	Knossos-Museum_Market-Archanes	8:20	10200
Day	Excursion	Departure Time	Cost (GRD)
Fri	Rethymno-Chania	8:20	10000
Fri	Ag. Nikolaos-Spinalonga-Elunda	8:30	10150
Fri	Rethymno-Chania-Arkadi	7:30	15000

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