

EUROMECH

EUROPEAN MECHANICS SOCIETY

Final Report

Please send this report to the Secretary-General of EUROMECH, within one month after the Colloquium.

EUROMECH Colloquium No: 380

Title: Laminar-Turbulent Transition Mechanisms and Prediction

Dates and location: September 14 - 17, 1998, Göttingen, Germany

Chairman: Priv.Doz. Dr.techn. Uwe Ch. Dallmann ; DLR-Institut für Strömungsmechanik,
Göttingen , Germany

Co-Chairman: Prof. Dr. Dan S. Henningson , FFA - The Aeronautical Research Institute
Bromma, Sweden

Dr.-Ing. Hans Bippes, DLR-Institut für Strömungsmechanik, Göttingen, Germany
Is there need of another Colloquium on the same or a related subject? Which year? 2001

Full registration fee: 410,- DM

What other funding was obtained? ERCOFTAC, DLR, Industry

What were the participants offered? Reduced registration fees

Number of members of EUROMECH (reduced registration fee):

Number of non-members of EUROMECH (full registration fee):

Number of participants from each country:

Austria	_____	Germany	<u>22</u>	Romania	_____
Belgium	_____	Great Britain	<u>7</u>	Russia	<u>7</u>
Byelorussia	_____	Greece	_____	Slovakia	_____
Bosnia	_____	Hungary	_____	Slovenia	_____
Bulgaria	_____	Ireland	_____	Spain	_____
Croatia	_____	Italy	<u>8</u>	Sweden	<u>2</u>
Czech Republic	<u>2</u>	Latvia	_____	Switzerland	<u>3</u>
Denmark	_____	Lithuania	_____	Ukraine	<u>2</u>
Estonia	_____	Netherlands	<u>1</u>	Yugoslavia	_____
Finland	_____	Norway	_____	Others	<u>3</u>
France	<u>8</u>	Poland	<u>1</u>		
Georgia	_____	Portugal	_____	Total	<u>66</u>

Please turn

**EUROMECH Colloquium 380 and
ERCOFTAC SIG 33 Conference**

**Laminar-Turbulent Transition Mechanisms
and Prediction**

**Chairman: U.C.Dallmann (Göttingen)
Co-Chairmen: D.S.Henningson (Bromma)
and H.Bippes (Göttingen)**

The EUROMECH Colloquium 380 was held in Göttingen from September 14 - 17, 1998 as a sequel to EUROMECH Colloquium 359 held in Stuttgart from March 10 - 13, 1997. The main aim was to present the advances achieved since then in understanding the mechanisms and predicting laminar - turbulent transition. The conference had 66 participants from 13 countries and included 45 presentations divided into the following sessions:

- Session 1: 2D Boundary layers
- Session 2: Boundary layer receptivity
- Session 3: 2D Separated flow
- Session 4: Attachment line flows
- Session 5: 3D Boundary layers
- Session 6: Subcritical transition and bypass transition
- Session 7: Centrifugal instability and Görtler vortices
- Session 8: High-speed boundary layers
- Session 9: Internal flows
- Session 10: Miscellaneous topics

The unique mix of temporal and spatial direct numerical simulation (DNS), parabolised stability equation (PSE), nonlinear equilibrium solution, asymptotic expansion and experimental approaches was used to shed light on the laminar - turbulent transition mechanism and its prediction. The closing discussion summarised the state of the art and indicated which problems should be tackled most urgently.

Besides EUROMECH financial support was also kindly provided by ERCOFTAC, DLR, Daimler - Benz, AEA Technology and Daimler - Benz Aerospace.

Göttingen, 20. September 1998

