

# EUROMECH

EUROPEAN MECHANICS SOCIETY

# Final Report

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

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EUROMECH Colloquium No: 366

Title: Porous Media: Theory and Experiments

Dates and location: June 23 - 27, 1997

Chairman: R. de Boer

Co-Chairman: S.J. Kowalski and K. Wilmanski

Is there need of another Colloquium on the same or a related subject? Which year? Yes, 2001

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Full registration fee: DM 350,00

What other funding was obtained? University of Essen, Förderverein für die Stadt Essen, Bosch-Stiftung

What were the participants offered? full board, social program

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Number of members of EUROMECH (reduced registration fee): 11

Number of non-members of EUROMECH (full registration fee): 32

Number of participants from each country:

Austria	_____	Germany	<u>  9  </u>	Romania	_____
Belgium	_____	Great Britain	<u>  1  </u>	Russia	<u>  7  </u>
Byelorussia	_____	Greece	<u>  1  </u>	Slovakia	_____
Bosnia	_____	Hungary	_____	Slovenia	_____
Bulgaria	_____	Ireland	_____	Spain	_____
Croatia	_____	Italy	<u>  4  </u>	Sweden	_____
Czech Republic	_____	Latvia	_____	Switzerland	_____
Denmark	_____	Lithuania	_____	Ukraine	_____
Estonia	_____	Netherlands	<u>  3  </u>	Yugoslavia	_____
Finland	_____	Norway	_____	Others	<u>  8  </u>
France	<u>  3  </u>	Poland	<u>  7  </u>	Total	<u> 43 </u>
Georgia	_____	Portugal	_____		

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## Scientific Report

The registration of the participants in the EUROMECH Colloquium 366 "Porous Media: Theory and Experiments" took place at the Bildungszentrum B·E·W in Essen-Heidhausen in the afternoon and evening on Sunday, June 22, 1997. In the evening a welcome reception brought together the participants of the Colloquium from different countries and different disciplines.

The EUROMECH Colloquium 366 was opened by the chairman of the Colloquium and the Prorektor of Essen University, Prof. Dr. Winterhage on Monday morning (June 23, 1997).

The morning session started with an invited lecture on transport phenomena in porous media by Prof. Dr. J. Bear, Haifa, editor of the Journal "Transport in Porous media" and one of the leading scientists in the field of porous media. The first day of the Colloquium was concerned with transport phenomena, localization and failure in porous media as well as on continuum-mechanical modelling.

The morning session on Tuesday, June 24, was opened by Prof. P. Lade, Johns Hopkins University, Baltimore (invited lecture on experiments and formulation of the effective stress principle). In the further course of the morning session other experimental observations were reported. In the afternoon session dynamics and wave propagation became the focus of attention.

A key-note lecture on micromechanical aspects in the porous media theory was given by A.K. Didwania, University of California, San Diego, on Wednesday, June 25. Other topics on this day were continuum mechanical modelling and general problems in the porous media theory.

Finally, the sessions on Thursday, June 26 were addressed problems of drying and swelling as well as general problems.

The EUROMECH Colloquium was closed by the chairman on Thursday, June 26, at 1:00 p.m.

The goal of EUROMECH Colloquium 366 was to bring together scientists from various fields of the porous media theory, namely from soil mechanics, geophysics, petroleum/energy engineering, chemical engineering and ceramics as well as biomechanics. Moreover the scientists were requested to present the recent findings in the porous media theory concerning general concepts and special investigations in the theoretical as well as in the experimental field.

The goal was almost completely reached as can be seen from the program and abstract booklets. Furthermore, the Bildungszentrum B·E·W, located in a picturesque landscape in the southern part of Essen, provided the appropriate atmosphere for the researchers to discuss scientific problems in calm and stimulating surroundings. Also, the social events – the welcome reception, the ice-breaker reception and the banquet – set the right comfortable atmosphere to discuss recent results in the porous media theory.

Some selected lectures (edited by the chairman of the Colloquium 366) will be published in a special edition of the Journal "Transport in Porous Media" next year.

July 23, '97

R. de Boer