

# EUROMECH

# Final Report

EUROPEAN MECHANICS SOCIETY

EUROMECH Colloquium No. 406

*Title:* Image Processing Methods in Applied Mechanics

*Dates and location:* May 6 – 8 , 1999, Warsaw, Poland

*Chairperson:* Tomasz A. Kowalewski

*Co-Chairpersons:* Witold Kosiński, Jürgen Kompenhans

*Is there a need of another Colloquium on the same or a related subject? Yes.*

*Which year? In 2003.*

*Full registration fee:* 1450,- PLN, *reduced:* 1300,-PLN, *students:* 300,-PLN

*What other funding was obtained?*

- Kasa Mianowskiego Foundation	5,000PLN
- KBN, National Committee of Scientific Research	6,000PLN (pending)
- Committee of Mechanics Polish Acad. Scs.	3,000PLN
- Euromech grants 3x700FF	1,400PLN
<i>Exhibitors payments</i>	
- Quantel S.A. (F)	580PLN
- RBM (D)	3,100PLN
- GAMBIF (PL)	1,000PLN
- EUROTEK (PL)	800PLN
<b>Total</b>	<b>20,880PLN*</b>

*\*) 1Euro = approx. 4.1PLN*

*What were the participants offered?*

- entry to all Colloquium sessions and exhibitions
- Colloquium materials
- tea and coffee during breaks
- accommodation and full subsistence during Colloquium (*not students*)
- performance in the National Opera House
- visit to the Royal Castle

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Number of members of EUROMECH (reduced registration fee) :	5
Number of non-members of EUROMECH (full registration fee) :	33
Number of invited authors of Keynote Lectures:	6
Number of supported participants from East and West Europe:	9
Number of locals/students ( <i>students fee</i> ):	10
Number of participants from the Local Organizing Committee:	4
<b>Total</b>	<b>67</b>

Number of participants from each country:

Austria	2	France	10	Netherlands	1	Sweden	1
Belgium	1	Germany	11	Poland	20 <sup>*)</sup>	Switzerland	1
Byelorussia	1	Great Britain	3	Romania	1	Ukraine	2
Czech Repub.	1	Hungary	1	Russia	1	Others 3 <sup>**)</sup>	
Denmark	1	Italy	5	Spain	1		

*\*) 5 of them full paid participants, \*\*) Japan - 1, Korea - 1, USA - 1*

**EUROMECH Colloquium 406**  
Image Processing Methods in Applied Mechanics  
Chairman: Tomasz A. Kowalewski, Warszawa  
Witold Kosinski, Warszawa & Jürgen Kompenhans, Göttingen

EUROMECH 406 was held in Warsaw on May 6<sup>th</sup> - 8<sup>th</sup> 1999, in the modern conference centre run by *Barnabite Fathers*, located close to the airport and city downtown. The Colloquium was organized by Institute of Fundamental technological Research, Polish Academy of Sciences, Association for Image Processing Poland and Institute of Fluid Mechanics, DLR Göttingen. There were sixty seven participants from twenty one different countries (including Japan, Korea and USA) and fifty papers were presented (all were oral). The principal topics of the meeting were introduced by six invited lectures:

- Giovanni Maria Carlomagno: *Quantitative Infrared Thermography and Convective Heat Transfer Measurements*
- Ian Grant: *Image Processing Problems in Fluid Mechanics*
- Thomas Kreis: *Digital holography and holographic interferometry*
- Malogorzata Kujawinska: *Phase methods of fringe pattern analysis*
- Wolfgang Osten: *Active vision in optical metrology*
- Paul Smigielski: *Differential interferometry or "shearography": Use in fluid mechanics and in solid mechanics. A long story.*

Colloquium on "*Image Processing Methods in Applied Mechanics*" is to some extent follow-up of the earlier meetings, fluid mechanics colloquia on image analysis (#279 Delft 1992 and #335 Rome 1995) and their solid mechanics counterparts (#350 Talence 1996 and #365 Sheffield 1997). It was aimed to create a common platform for fluid and solid mechanic groups working on the same subject, namely development and application of the modern image acquisition and image processing methods. We have impression that this aim was successfully fulfilled. Topics discussed included digital holography and interferometry, motion analysis including several mutations of Particle Image Velocimetry, pattern recognition, size, shape and colour analysis, thermography (infrared, liquid crystals), measurement of species concentration, three-dimensional image analysis, tomography and high speed imaging. There were also few presentation on image processing problems characteristic for medical problems.

Despite large variety of subjects and differences in the scientific background of participants, all sessions were very good attended and papers discussed vitally to the last minutes of the meeting. It appeared that it is possible to find common language for apparently very different problems of mechanics. Bringing together scientists from the diverse fields proved to be very fruitful and promising. The need for further interactions between various groups working on image processing methods were emphasised by several participants.

The 250 pages booklet containing full set of extended abstracts of the contributions has been edited. It appeared in the series of IPPT PAN reports (*Prace IPPT 4/1999*) and is distributed through regular library channels. Further details together with the Colloquium program, short abstracts and list of participants are available on <http://fluid.ippt.gov.pl/euro406/>

Tomasz Kowalewski  
22.05.1999

Warszawa,