

LIST OF PAPERS

KEYNOTE LECTURES

Quantitative Infrared Thermography and Convective Heat Transfer Measurements <i>Giovanni Maria Carlomagno</i>	7
Image Processing Problems in Fluid Mechanics <i>Ian Grant</i>	15
Digital holography and holographic interferometry <i>Thomas Kreis</i>	19
Phase methods of fringe pattern analysis <i>Małgorzata Kujawińska</i>	23
Active vision in optical metrology <i>Wolfgang Osten</i>	29
Differential interferometry or "shearography"; Use in fluid mechanics and in solid mechanics. A long story. <i>Paul Smigielski</i>	31
2D images and 3D objects analysis and recognition, using intelligent approach. <i>Patrick Wang</i>	37

CONTRIBUTED PAPERS

Interferometric Techniques for Measuring Flow Velocity Fields <i>P. Arroyo, P. Alvarez, N. Andrés, M. Quintanilla</i>	39
Limits of Division Non-Metallic Engaging-Metallic Mould in the Composition Material of the Granule B ₄ C-(Ti-Ni-Mo) <i>V.Y. Belousov, G.N. Dubrovskaya, N.V. Olekseenko</i>	43
Shape Deformation Analysis of Rail Car Brakes with Using Image Processing Techniques <i>P. Boguś, S. Bocian</i>	47
Simultaneous DPIV Measurements of Two-Phase Particle-Liquid Flow <i>J. Bolinder, Wu Zhi Lei, L. Fuchs</i>	51
Videogrammetric System for Measurements of Movement and Deformation of Real-Scaled Helicopter Rotor Blades <i>S. Bosnyakov, V. Koulesh, A. Morozov, N. Tarasov, S. Fonov</i>	57

Enhancement of Thermographic Images Quality Using Pyrosignal Digital Frame-by-Frame Processing <i>I. Bozhenko, Z. Hrytskiv, P. Kondratov</i>	61
The Quaternionic Fourier Transform and its Applications in Texture Segmentation <i>T. Buelow</i>	65
Conditional PIV Analysis of a Jet in a Cross Flow <i>R. Camussi, A. Stella, T. Kowalewski, G. Guj, F. Stella</i>	67
Principal Components Analysis for PIV Applications <i>A. Cenedese, A. Pocecco, G. Querzoli</i>	71
Advanced Evaluation Methods in PIV <i>T. Dewhirst, J. Kompenhans, M. Raffel, O. Ronneberger</i>	75
Strain Solitary Wave Evolution in Finite Nonlinearly Elastic Solid Rods <i>G.V. Dreiden, A.V. Porubov, A.M. Samsonov, I.V. Semenova</i>	79
Optical flow technique used to characterise the flow inside different cavities intracting with a boundary layer <i>A. Elcafsi, A. Rambert, P. Gougat</i>	83
Comparative Study of Correlation-Based PIV Evolution Methods <i>R. Fei, L. Gui, W. Merzkirch</i>	87
Industry Control of Geometrical Parameters of Railway Wheels by Videogrammetric Method <i>S.D. Fonov, V.P. Koulesh, V.D. Vermel, V.F. Zabolujev</i>	91
Visualization of Heat Transfer Enhancement Regions Modified by the Interaction of Inclined Impinging Jets into Crossflow <i>E. Fornalik, Yu. Yamamoto, Wei Chen, K. Nakabe, K. Suzuki</i>	95
Quantitative Analysis of Melting by Image Processing Technique <i>J. Gościk</i>	99
Pedagogical Application of Photoelastodynamics for Solid Mechanics and Dynamics of Structures <i>Y. Gourinat, A.S. Pramono</i>	101
Measurement of Temperature of Drops when in Flight <i>F. Hervy, F. Feuillebois</i>	105
A Three-Dimensional Point Localization Technique <i>D. Ircha, T.A. Kowalewski, A. Cybulski, R. Krajewski</i>	107

Ultrasonic Computer Tomography Technologies in Solid Mechanics <i>V.V. Koshoviy</i>	111
Image processing in quantitative evaluation of two-phase flow problems <i>T.A. Kowalewski</i>	115
Deformations Control and Measurement with the Help of Speckles <i>V.I. Lachno, A.A. Prijemko, I.A. Eksperiandova</i>	119
A 3D PTV Technique for Granular Medium in Liquids <i>V. Latard, Y. Brunet, A. Merlen</i>	123
Measurement of Translation and Rotational Velocity of a Sphere in Stokes Flow <i>N. Lecoq, R. Anthore, M.L. Ekiel-Jezewska, F. Feuillebois</i>	127
PIV Animation of Turbulent Flows from 2-D Inclined Rectangular Prisms <i>Y.-H. Lee, J.-W. Choi, Y.-C. Im, K.-T. Song</i>	131
Tomographic Measurement Techniques- Visualization of Multiphase Flows. <i>M. Lörcher, D. Schmitz, D. Mewes</i>	135
Application of Anisotropic Methods of Image Processing at Research of Aircraft Model with the Help of Pressure Sensitive Paint <i>A. N. Morozov</i>	139
Increase of Accuracy of Pressure Sensitive Paint Method by Means of Radiation Self-Illumination Account <i>A.N. Morozov, P.A. Smirnov</i>	145
Computer-Aided Simulation for Interaction between Prosthesis and Femur <i>V. Narkevich</i>	149
Morphological detection and feature-based classification of cracked regions in ferrites <i>M. Nieniewski, L. Chmielewski, A. Józwiak, M. Skłodowski</i>	151
Creating Colour Tables for the Exploratory Data Analysis <i>S. Nikiel</i>	155
PIV, LIF and 3D-PIV Measurements Applied on the Wake Behind a Sphere <i>J. Nunez v. Voigt, A. Ziemann, H.E. Fiedler</i>	159
New Algorithms in Particle Tracking Velocimetry <i>K. Ohmi, L. Yu, S. Joshi</i>	163
Application of Moire Technique for Model Deformation Measurements in Large Scale Wind Tunnels <i>D. Pallek, P.H. Baumann, K.A. Buetefisch, J. Kompenhans</i>	167

Using Liquid Crystals for Analyzing Thermofluidodynamical Processes in Liquids during Pressurization <i>M. Pehl, F. Werner, A. Delgado</i>	171
Prospects of X-Ray Microtomography for Studies of Composite Materials <i>R. Pyrz</i>	175
Performance Evolution of an Optical Flow Technique for Particle Image Velocimetry <i>G. M. Quénot</i>	177
Particle resuspension characterization by optical methods <i>A. Rambert, L. Huber, P. Gougat</i>	181
Using Continuum Mechanics Operators for Detection and Quantification of Evolving Processes in 3D Medical Images <i>D. Rey, H. Delingette, G. Subsol, N. Ayache</i>	185
Combinatorial 3-D Sequencing Theory and Methods in Applied Mechanics <i>V.V. Riznyk</i>	189
Conversion of displacement/strain full-field experimental data into FEM <i>L. Salbut, M. Kujawińska, R. Sitnik</i>	193
Pattern Recognition Analysis of a Turbulent Separated Flow with D-PIV <i>F. Scarano, M. L. Riethmüller</i>	197
A Fast Ray Algorithm for Visualizing Medical Image Data <i>E. Schuster, T. Lorang, M. Gengler, M. Prinz</i>	201
Video Recording of Fast and Ultrafast Events <i>B. Stasicki, G.E.A. Meier</i>	207
Heat Transfer Measurements in Heat Exchangers by Liquid Crystal Thermography <i>J. Stasiek, G. Tanda, M. Ciofalo</i>	211
High-Speed Digital and Video Recording of Fast Events for Motion Analysis <i>D. Thomas, W. Majewski</i>	215
Ultrasound Transducer Vibration Measurements with an Image Pattern Recognition Application <i>M. Vaida, A. Suciu, T. Moldovan</i>	219
Applying Feature Based Tracking to Particle Image Velocimetry <i>J. Verestóy</i>	223
Vision-Based Device for In-Vivo Measurement of Elasto-Mechanical Properties of Soft Organic Tissues <i>V. Vuskovic, R. Blaser, A. Spiga</i>	227

Flow-Regime Discrimination in Bubble Columns Using Electrical Capacitance Tomography <i>R. M. West, M. A. Bennett, X. Jia, S. P. Luke, K. L. Ostrowski, R. A. Williams</i>	231
Measurement of Mixing of a Passive Scalar in a Turbulent Pipe by PIV and LIF <i>J. Westerweel, L. Aanen</i>	235
Set of Optic-Physical Equipment for Phase - Structure Visualizing Unhomogeneous Gas Flow in Wind Tunnel <i>V.A. Yakovlev</i>	239
Digital Microgram Processing in Tribodiagnostics <i>F. Zuzák, P. Mautner</i>	243