

# 13th INT SYMP ON APPL OF LASER TECHNIQUES TO FLUID MECHANICS

26 - 29 June 2006

## Abstracts submitted

Title	Authors	Institution	Country
PIV Measurements in a Diesel Spray from a Common Rail Injection System under Realistic Engine Conditions	M. Auriemma, G. Caputo, F.E. Corcione, G. Valentino	Istituto Motori, CNR	Italy
A PIV algorithm for measuring periodic flows	S. Vanlanduit, J. Vanherzeele, M. Brouns and P. Guillaume	Vrije Universiteit Brussel	Belgium
Near wall organisation of a turbulent boundary layer over a two-dimensional rough wall	Lyazid Djenidi and Robert A. Antonia	University of Newcastle	Australia
PIV Measurements on a Rectangular Jet Issuing Against a Uniform Flow	Dr. Kondala R. Saripalli	Boeing Company	USA
LDA MEASUREMENT ON NEW NAVAL BLUFF BODY GEOMETRIES	José R. Sánchez	INTA	Spain
SIMULTANEOUS VELOCITY AND PRESSURE MEASUREMENTS ON SUBMERGED BREAKWATERS	Ana Cristina Neves, Fernando Veloso Gomes, Francisco Taveira Pinto	IHRH - FEUP	Portugal
Flow characterization using a Laser Doppler Vibrometer: Flow in a cylinder wake	Joris Vanherzeele, Mark Brouns, Paolo Castellini, Patrick Guillaume, Milena Martarelli, Daniele Ragni and Steve Vanlanduit	Vrije Universiteit Brussel	Belgium
Measurements of correlations between droplet size and temperture using combined PDA and Laser Induced Fluorescence.	Alain Delconte Damien Blondel Fabrice Lemoine	LEMETA-CNRS	France
Nanoparticles Detection at Internal Combustion Engines Exhaust by Optical Techniques.	S. Di Iorio, S. S. Merola, B. M. Vaglieco, C. Tornatore	Istituto Motori – National Research Council	Italy
A backscatter imaging and light scattering system for monitoring of crystallization processes	Amir Naqwi, Chris Fandrey, Gerry Kauma Powerscope Incorporated David Grant, Yushi Feng, Sachin Lohani University of Minnesota	Powerscope Incorporated	USA
Supersonic Flow Field Investigations Using a Fiber-Optic Based Doppler Global Velocimeter	James F. Meyers, Joseph W. Lee, Mark T. Fletcher, Angelo A. Cavone, J. Ascención Guerrero Viramontes	NASA Langley Research Center	United States
Development of Point Doppler Velocimetry for Flow Field Investigations	Angelo A. Cavone, James F. Meyers, Joseph W. Lee	NASA Langley Research Center	United States
Mean Velocity and Moments of Turbulent Velocity Fluctuations in the Wake of a Model Ship Propulsor	J. Pêgo H. Lienhart F. Durst	LSTM-Erlangen	Germany
Molecular Velocimetry Using Photothermal Grating Induced by Laser-Multibeam Interference	Noboru Nakatani	Ashiya University	Japan
LASER-DOPPLER-VELOCIMETRY MEASUREMENTS IN A ONE AND A HALF STAGE TRANSONIC TEST TURBINE WITH DIFFERENT ANGULAR VANE-VANE POSITIONS	Oliver SCHENNACH, Jakob WOISETSCHLÄGER, Andreas MARN, Emil GÖTTLICH	Graz University of Technology	Austria
Flow analysis around a rotating wheel	Emmanuelle THIVOLLE-CAZAT Patrick GILLIERON	Renault	France
Intensely swirling turbulent pipe flow downstream of an orifice: the influence of an outlet contraction	Marcel Escudier, Keith Nickson and Rob Poole	University of Liverpool	UK
Calibration of Laser Doppler Anemometers by using a Linear Motor	V. Strunck, H. Müller, D. Dopheide	Physikalisch-Technische Bundesanstalt	Germany
PIV Measurements of a Shock Wave/Turbulent Boundary Layer Interaction	R.A. Humble, F. Scarano, B.W. van Oudheusden and M. Tuinstra.	Delft University of Technology	The Netherlands
Experimental Study on Interfacial Film Dynamics of Oscillating Multiphase Micro Flows	Huihe QIU and Xishi WANG	The Hong Kong University of Science & Technology	Hong Kong

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Interaction of a vortex ring with a neutrally buoyant sphere	J.J. Allen, Y. Jouanne B. N. Shashikanth	New Mexico State University	USA
Boundary layer structure in highly turbulent Rayleigh-Bénard convection	Dr. Ronald du Puits Dr. Christian Resagk Prof. André Thess	Ilmenau University of Technology	GERMANY
Vortex-induced vibration of a splitter plate; Effect of Re number	Tero Pärssinen, Hannu Eloranta and Pentti Saarenrinne	Tampere University of Technology	Finland
Heat release indicators from flame imaging techniques for turbulent flames	Felix Güthe, Bruno Schuermans, Andreas Inauen, Sabine Schenker, Rolf Bombach, Niclas Tylli, Walter Hubschmidt	Alstom Switzerland	Switzerland
Applications of the LIF-method for the diagnostics of the combustion process of gas-IC-engines	Wolfram Kirchweyer, Rainer Haslacher, Institute for internal combustion engines, TU Graz; Michael Hallmannsegger, Udo Gerke, BMW Group research and technology	TU Graz	Austria
Tracer based Shock Visualisation	Thomas Gawehn Richard Schodl	Deutsches Zentrum für Luft- und Raumfahrt	Germany
Simultaneous OH and HCHO Laser Induced Fluorescence on Premixed Flames of Various Hydrocarbons	M. AUGÉ, D.A. LACOSTE, F. LACAS and J.-C. ROLON		France
CIVB Flashback Analysis with Simultaneous and Time Resolved PIV-LIF Measurements	Marco Konle Anton Winkler Johann Wäsle Thomas Sattelmayer	Technische Universität München	Germany
Stereo-Micro PIV measurements of the three-dimensional separated flow in the wake of a backward facing step	Martin Brede, Matthias Witte and Alfred Leder	Universität Rostock	Germany
OPPORTUNITIES OF THE DOPLER SIGNAL TRACKING FILTER FOR ESTIMATIONS OF TURBULENCE PARAMETERS IN SWIRLING FLOWS	Victor I. Titkov, Vladimir V. Lukashov	S.S.Kutateladze Institute of thermophysics	Russia
The Frequency Dependence of the Characteristics of Coaxial Jet Flows	F. Kerhervé & J. Fitzpatrick	Trinity College Dublin	Ireland
COUPLING TIME-RESOLVED PIV FLOWFIELDS AND PHASE-INVARIANT PROPER ORTHOGONAL DECOMPOSITION FOR THE DESCRIPTION OF THE PARAMETERS SPACE IN A DIESEL ENGINE	Imran COSADIA Jacques BOREE Patrick DUMONT Georges CHARNAY	RENAULT s.a.s.	FRANCE
Spatio-Temporal Correlations for Turbulent Jet Flows using the Point Reference Global Correlation (PRGC) Technique	F. Kerhervé J. Fitzpatrick	Trinity College Dublin	Ireland
Instantaneous Two-frequency Planar Doppler Velocimetry using pulsed Nd:YAG lasers	Tom O.H. Charrett, Ralph P. Tatam	Cranfield University	UK
Experimental investigations of human voice generation	Stefan Becker, Stefan Kniesburges, Gerhard Link, Christian Hahn, Manfred Kaltenbacher	University Erlangen-Nuremberg	Germany
Account for extinction and multiple scattering in Planar Droplet Sizing of dense sprays	D.Stepowski, O.Werquin, C.Roze, T.Girasole	CNRS et Université de Rouen	France
Optical Stokes Flow: An Imaging-Based Control Approach	P. Ruhnau C. Schnoerr	Mannheim University	Germany
Fat-sheet PIV with Computation of Full 3D-Strain Tensor using Tomographic Reconstruction	Bernhard Wieneke	LaVision GmbH	Germany
An empirical method for efficient spectrum estimation from LDA data	E. Konstantinidis, S. Balabani and M. Yianneskis	King's College London	United Kingdom
CH Double-Pulsed PLIF Measurement in Turbulent Premixed Flame	Mamoru TANAHASHI Shohei TAKA Toshio MIYAUCHI	Tokyo Institute of Technology	Japan
Cold flow PIV and spray visualization experiments applied to the development of a dual fuel gas turbine burner	Stefano Bernero, Adrian Glauser, Martin Zajadatz;	Alstom (Switzerland) Ltd.	Switzerland
Aerodynamics of a radial jet from a tube breach in a shell-and-tube heat exchanger	F.J. Sánchez-Velasco, C. López del Prá, Luis E. Herranz	CIEMAT	Spain
DETERMINATION BY PIV OF THE MEAN FLOW STRUCTURE NEAR AN AIR CAVITY IMMersed IN A DUCT	Vassilev A., El Hajem M., Botton V., Ben Hadid H.	LMFA	France

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PIV measurements of the vortical wake behind tilt-rotor blades	D. Favier, C. Barla, C. Rondot, C. Maresca, M. Raffel, H. Richard, J. Bosbach, A. Henning	LABM	France
Application of Particle Image Velocimetry to a Transonic Centrifugal Compressor	M. Voges, M. Beversdorff, C. Willert, H. Krain	Institute of Propulsion Technology	Germany
Simultaneous HS-PIV and shadowgraph measurements of gas-liquid flows in a horizontal pipe	Edurne Carpintero Rogero, Bernhard Kroess and Thomas Sattelmayer Suggested Sesion: Two phase Flows	Technische Universitaet Muenchen	Germany
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Measurement of the evaporation efficiency of metal catalysts using LIF	Sebastian Steinbach, Jürgen Grünwald and Thomas Sattelmayer	Technische Universität München	Germany
Breakup Process of Initial Spray of D.I. Gasoline Injector by LIF Imaging Technique	Jeekeun LEE Keiya NISHIDA Byungjoon RHO Yoonkwon LEE Fuisoo KIM	Chonbuk National University	KOREA
Fluid-dynamic Characterisation of Turbulent Flows by means of Unseeded Laser Interferometry	Paolo Castellini Milena Martarelli	Università Politecnica delle Marche	Italy
Development of an Annular Porous Burner for the Investigation of Adiabatic Free Burning Flames	Johann Wäsele, Anton Winkler, Elisabeth Röble, Christoph Hirsch, Thomas Sattelmayer	TU München	Germany
Influence of wavy surfaces on coherent structures in a turbulent flow	Simon Kuhn Carsten Wagner Philipp Rudolf von Rohr	Laboratory of Transport Processes and Reactions	Switzerland
Simultaneous Two-Dimensional Determination of Mixture Fraction and Flow Velocity in a Non-Reacting Free Jet Flow by Planar LIF and PIV	Sebastian Pfadler, Micha Löffler, Friedrich Dinkelacker, Frank Beyrau and Alfred Leipertz	Universitaet Erlangen-Nuernberg	Germany
Velocity profile measurement results for a high turbulent duct flow by digital image processing	Roger Pizzato Nunes, Flavio Tadeu van der Laan	Universidade Federal do Rio Grande do Sul (UFRGS)	Brazil
Demonstration and characterisation of a new interferometric particle imaging configuration for bubbles	Sam Dehaeck Jeroen van Beeck	Von Karman Institute	Belgium
Background Oriented Schlieren technique – sensitivity, accuracy...	Dipl.-Ing. Erik Goldhahn Prof. Dr.-Ing. Jörg Seume	University of Hannover	Germany
Application of long-distance Micro-PIV for the investigation of critical flows at large Re	CJ Kaehler	TU Braunschweig	Germany
Characterization of fluid dynamics in a mixing tank with Stereo-PIV experiments	Markus Honkanen, Pentti Saarenrinne, Martin Hecklau, Teuvo Kilpiö, Marjatta Piironen	Tampere University of Technology	Finland
Use of the Phase Information in the Digital Holographic Particle Image Velocimetry	Volodymyr Ilchenko, Thomas Sattelmayer	Technical University of Munich	Germany
Interpretation of Phase Doppler Measurements in a Dense Transient Fuel Spray	Pitcher G., Wigley G. and Stansfield P.	Lotus Engineering	UK
2D3C-Laser Doppler Sensor for highly spatially resolved flow field investigations	Lars Büttner Andreas Voigt Christian Bayer Jürgen Czarske	Dresden University of Technology	Germany
Measuring and processing in-cylinder measurements of NO and OH obtained by laser-induced fluorescence in a diesel rapid compression machine	R. Demory, C. Crua, M.R. Gold, M.R. Heikal	University of Brighton	England
EXPERIMENTAL STUDY OF TWO DIMENSIONAL POLAR BETA-PLANE TURBULENCE	G. F. Carnevale, A. Cenedese, S. Espa, M. Mariani	University 'La Sapienza'	Italy
Study of Flow Field In An Advanced Bladeless Rotary Blood Pump Using Particle Image Velocimetry	S. Sastry, J.R. Kadambi, J.M. Sankovic, V. Izraelev	Case Western Reserve University	USA
Experimental and Numerical Studies of an Inverted Cyclone gasifier-experimental analysis	Nick Syred Tom fraser Tony Griffiths	Cardiff University	UK

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DPIV- measurements of the flow field in a micro-axial blood pump	M. Triep, Ch. Brücker Institut für Mechanik und Fluidodynamik, TU Freiberg, Germany	TU Freiberg	Germany
Experimental Investigation of Aerosol Deposition in Alveolar Lung Airways	R.Theunissen N.Buchmann P.Corieri M.L.Riethmuller C.Darquenne	von Karman Institute for Fluid Dynamics	Belgium
3D micro-scale velocimetry methods: A comparison between 3D- $\mu$ PPTV, stereoscopic $\mu$ PIV and tomographic $\mu$ PIV	R. Lindken, J. Westerweel, B. Wieneke,	Delft University of Technology	Netherlands
Investigation of the Characteristics of Recirculation Zones Generated by Swirl Flow and Combustion Systems	Nick Syred	Cardiff University	UK
Visualisation of coherent flow structures in thermal convection using PIV	A. Maystrenko, Ch. Resagk, A. Thess	Ilmenau University of Technology	Germany
Time-phase resolved PIV/DMI measurements on two-dimensional fluid-structure interaction problems.	J. Pereira Gomes H. Lienhart	Lehrstuhl für Strömungsmechanik (LSTM) University of Erlangen-Nürnberg	Germany
Flow of lubricant in hydrostatic bearing pockets	Hongmin Li, Changhu Xing, Minel J. Braun	The University of Akron	USA
Performance and accuracy investigations of two Doppler global velocimetry systems applied in parallel	C. Willert, G. Stockhausen, J. Klinner, C. Lempereur, P. Barricau, P. Loiret, J.C. Raynal	German Aerospace Center (DLR)	Germany
X-ray Visions of Multiphase Flow	Jin Wang	Argonne National Laboratory	United States
Velocity statistics of grid turbulence obtained using multigrid cross-correlation digital PIV	P.L. O'Neill, D. Nicolaides, D.R. Honnery and J. Soria	University of Western Australia	Australia
PIV measurements of the asymmetric wake of a two dimensional heaving airfoil	von Ellenrieder, K. D. and Pothos, S.	Florida Atlantic University	USA
Measurement of large-scale flow structures in air using a novel 3D particle tracking velocimetry technique	C. Resagk, E. Lobutova, R. Rank, D. Müller, T. Putze, H.-G. Maas	Ilmenau University of Technology	Germany
Assessment of time resolved PIV in a rotating channel applied to turbomachinery	Di Sante A., Van den Braembussche R.A.	von Karman Institute for fluid dynamics	BELGIUM
Measurements of micro-forces on a fixed air bubble using flexible micro-pillars	S. Große, Chr. Brücker, W. Schröder	RWTH Aachen University	Germany
PIV Measurements of Unsteady Vortex Behavior in the Near Wake of a Swept Wing Model	G. Huppertz, M. Klaas and W. Schröder	RWTH Aachen	Germany
Particle Image Velocimetry in a high temperature furnace operating in flameless combustion regime	C. Rottier, B. Taupin, D. Honoré, A. Boukhalfa, R. Hauguel	CORIA - UMR 6614	France
A new set-up for single-shot measurements in turbulent flames by spontaneous Raman scattering - Application in high pressure cryogenic flames	G. Cléon, A. Cessou, D. Stepowski	CORIA- CNRS UMR6614 University and INSA of Rouen	France
PIV on the flow of a simplified upper airway model	M. Brouns, S.Verbanck, J. Van Beeck, S. Vanlanduit, J. Vanherzeele, and C. Jacor	Vrije Universiteit Brussel	Belgium
Evaluation on an M-JPEG2000-based PIV System	A. Rinoshika T. Ueyama H. Hu	Yamagata University	Japan
2C and 3C-PIV measurements on a rotor model in hover condition	H. Richard, J. Bosbach, A. Henning, M. Raffel, B. van der Wall	German Aerospace Center (DLR)	Germany
Single camera DGV based on FM and FSK techniques	Harald Müller, Michael Eggert, Dietrich Dopheide, Jürgen Czarske, Lars Büttner, Andreas Fischer	Physikalisch-Technische Bundesanstalt	Germany
Measurement and simulation of a benchmarking jet in crossflow configuration	C. Cárdenas, R. Suntz, J. Denev, J. Fröhlich, H. Bockhorn	University of Karlsruhe	Germany
Optical Measurements in Underexpanded Free and Impinging Particle Laden Jets	Daniel Mitchell Julio Soria Damon Honnery	Monash University	Australia

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PIV Analysis of In-cylinder Flow Structures over a Wide Range of Realistic Engine Speeds	P. Stansfield, G. Pitcher, G. Wigley	Loughborough University	UK
Application of PIV technique to measurement of MHD turbulent pipe flow	J. Takeuchi S. Satake N.B. Morley T. Yokomine T. Kunugi M.A. Abdou	University of California, Los Angeles	USA
Investigation into the selection of viewing configurations for 3D Planar Doppler Velocimetry (PDV) measurements	Tom O.H. Charrett, David S. Nobes and Ralph P. Tatam	Cranfield University	UK
Doppler signal detection and particle time of flight estimation using wavelet transform for acoustic velocity measurement	Anne Degroot, Silvio Montresor, Bruno Gazengel, Olivier Richoux and Laurent Simon	Laboratoire d'Acoustique de l'Université du Maine	France
Aerodynamic Characteristics of Flapping Motion in Hover	D. Funda Kurtulus Laurent David Alain Farcy Nafiz Alemdaroglu	Middle East Technical University(Turkey) and Ecole Nationale Supérieure de Méchanique et d'Aerotechnique (France)	Turkey
Digital Image Plane Holography for Three-Component Velocity Measurements in Turbomachinery Flows	Pilar Arroyo, Julia Lobera, Sara Recuero and Jakob Woisetschläger	I3A - Universidad de Zaragoza	Spain
Measurement of Universal Velocity Profile in a Turbulent Channel Flow with a Fiber-Optic Profile Sensor	K. Shirai, C. Bayer, T. Pfister, A. Voigt, L. Büttner, J. Czarske, H. Müller, G. Yamanaka, S. Becker, H. Lienhart, F. Durst	Dresden University of Technology	Germany
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Velocity Measurements of the Flow into and out of Sharp and Round-edged Holes in a Duct Wall	L A S B Martins, H Almeida and J H Whitelaw	University of Minho	PORTUGAL
DPIV MEASUREMENTS OF DYNAMIC FLOW PATTERNS IN A REALISTIC MODEL OF THE LUNG AIRWAYS DOWN TO THE 6TH GENERATION	K. Adler, W. Schröder, Ch. Brücker	TU Freiberg	Germany
The Effect of Gurney Flap Height on Vortex Shedding Modes Behind Symmetric Airfoils	D. R. Troolin, E.K. Longmire, W. T. Lai	TSI Incorporated	USA
Quantitative soot measurements in an HSDI Diesel engine	Henrik Bladh, Per-Erik Bengtsson, Leif Hildingsson, Anders Hultqvist, Volker Gross		Sweden
Synchronized PIV-LDV measurements in the subsonic flow developing over an open cavity	Thierry M. Faure François Lusseyran Luc Pastur Panayotis Adrianos Philippe Debesse	LIMSI	France
Two-phase cooling characteristics of a multiple-intermittent spray	Miguel R. O. Panão António L. N. Moreira	Instituto Superior Técnico	PORTUGAL
Comparison between PIV measurements from high-speed (CMOS) and cross-correlation (CCD) cameras in a jet flow	M. Falchi, G.P. Romano	University	Italy
Secondary atomization of drop impactions onto heated inclined surfaces	A. L. Moreira, A. S. Moita, G. E. Cossali, M. Marengo, M. Santini	Instituto Superior Técnico	Portugal
Combined PIV-LIF measurements in a turbulent liquid-liquid Taylor-Couette flow	Florent Ravelet, Rene Delfos, Jerry Westerweel	Delft University of Technology	The Netherlands
Dynamic PIV Measurements of High-speed Turbulent Jet with a Single Tab	Young Gil Jang, Seok Kim and Sang Joon Lee	Pohang University of Science and Technology	Korea
On the influence of the mitral valve on the ventricular flow	Fortini S, Querzoli G, Cenedese A, Marchetti M and Del Prete Z	Università di Cagliari	Italia

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APPLICATION OF 3D-PTV TO TRACK PARTICLE IN FLUID MECHANICS EXPERIMENTS	Antonio Cenedese, John H. Cushman and Moroni Monica	University of Rome "La Sapienza"	Italy
Investigation of Vortex Wake Perturbation by Mass Injection and Solid Vortex Generators using Particle Image Velocimetry	Dr A L Heyes J Chen	Imperial College London	UK
Experimental and numerical investigations of turbulent diverging flows on 60° bifurcations	N. P. Costa, R. Maia	Faculdade de Engenharia da Universidade do Porto	Portugal
Experimental Study of the Instabilities of a Counter-Rotating Vortex Pair.	Dr A L Heyes N Taylor	Imperial College London	UK
The Application of Doppler Global Velocimetry to Vortex Wake Studies in a Low Speed Wind Tunnel	Dr A L Heyes R Jones	Imperial College London	UK
Evaluation of Integral Forces and Pressure Fields from Planar Velocimetry Data for Incompressible and Compressible Flows	B.W. van Oudheusden, F. Scarano, E.W.M. Roosenboom, E.W.F. Casimiri, L.J. Souverein	Delft University of Technology	The Netherlands
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Doppler Global Velocimetry in wind tunnels - Implementation issues and performance analysis	C.Lempereur, P.Barricau, C.Gleyzes (ONERA) C.Willert,G.Stockausen,J.Klinner (DLR)	ONERA	FRANCE
Correlation Velocimeter for Dense Sprays	H. Chaves C. Kirmse Ch. Brücker F. Obermeier	TU-Freiberg	Germany
Application of 3D CT technique for Fluid Flow in Porous Media	Kazuhiro Yamamoto, Hiroshi Yamashita, Naoki Takada, Masaki Misawa	Nagoya University	Japan
Effect of active control on the shedding of vorticity in cavity flows	Ludovic Chatellier Janick Laumonier Yves Gervais	Université de la Rochelle	FRANCE
PIV measurements in an underexpanded hot free jet	C. Chauveau, D. Davidenko, B. Sarh, I. Gökalp, V. Avrashkov, C. Fabre	CNRS	FRANCE
Particle characterization by laser light transmission technique	João M. P. Coelho, Anabela Correia, M.Teresa Chambino	Instituto Nacional de Engenharia, Tecnologia e Inovação	Portugal
Generalised Airy Theory (GAT) :Comparison with the GLMT and application to burning droplets	M. R.Vetrano, J. van Beeck, M. Riethmuller	Von Karman Institute for Fluid Dynamics	Belgium
Effect of the vegetation density on the turbulence properties in a canopy flow	L. Pietri, M. Amielh, F. Anselmet	I.R.P.H.E.	FRANCE
Cellular Neural Network Based PTV	Prof.Dr.Kazuo Ohmi	Osaka Sangyo University	Japan
Diagnostics of Reactive Zone in Premixed Flames via Acetone-OH Simultaneous PLIF	Yuji NAKAMURA Satoshi MANOME Hiroshi YAMASHITA	Hokkaido University	Japan
Assessment of Uncertainty in a PIV System Measurement	Maria Luísa Collucci da Costa Reis Luciano Amaury dos Santos Olympio Achilles de Faria Mello	Centro Técnico Aeroespacial	Brasil
Application of PIV to velocity measurements in the liquid film flowing down inclined cylinder	S. V. Alekseenko, V. A. Antipin, A. V. Bobylev, D. M. Markovich	Institute of Thermophysics	Russia
INVESTIGATION OF OFF-DESIGN CONDITIONS IN A RADIAL PUMP BY USING TIME-RESOLVED-PIV	Nico Krause, Elemer Pap, Dominique Thevenin	LSS	Germany
Generalisation of the critical angle refractometry for the characterisation of clouds of bubbles.	Fabrice Onofri, Benoit Amiot, Janusz Mroczka	IUSTI-CNRS/University of Provence, UMR n°6595	France
FLOW FIELD IN IMPINGING JETS CONFINED BY SLOPPING PLANE WALLS	A. S. Cavadas, J. B. L. M. Campos and F. T. Pinho	FEUP	Portugal

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Investigation of shear driven film flows by means of $\mu$ -PIV	Peter Schober, Klaus Dullenkopf, Armin Müller and Hans-Jörg Bauer	Universität Karlsruhe	Germany
Dipl.-Ing.	Andrin Landolt and Thomas Roesgen	ETH Zurich	Switzerland
3D3C Time-Resolved Measurements with a Single Camera Using Optical Aberrations	Rainer Hain Christian J. Kähler	TU Braunschweig	Germany
Liquid Phase Velocity Investigations around a Static Mixer using Laser-Doppler Anemometry (LDA), Particle Image Velocimetry (PIV) and Large-Eddy Simulation (LES)	Stefan Leschka, Katharina Zaehringer, Andreas Hauser, Achim Gordner, Gabriel Wittum, Dominique Thévenin	University of Magdeburg	Germany
Large-Scale Particle Image Velocimetry for Measurement of Convective Airflows	J. Bosbach, M. Kühn, C. Wagner, M. Raffel, C. Resagk, R. du Puits, A. Thess	German Aerospace Centre Göttingen	Germany
LDA measurements of non-Newtonian liquids in pipe flow	R J Poole, S Rosa and M P Escudier	University of Liverpool	UK
Investigation of Aeroacoustic Noise Sources by Simultaneous PIV and Microphone Measurement	Kaepernick, K., Henning, A., Dillmann, A., Koop, L., Ehrenfried, K.	Technical University of Berlin	Germany
Quantum Nanospheres for Submicron Particle Image Velocimetry	Carl Meinhart* & Patrick Freudenthal**	University of California	USA
Investigation of a turbulent spot using time-resolved tomographic PIV	A. Schröder, G.E. Elsinga, F. Scarano and U. Dierksheide	DLR	Germany
Boundary Layers Measurement over an Airfoil by Using PIV with High Magnification	Kijung Kwon and Jangyeon Lee	Korea Aerospace Research Institute	Korea
Flow field studies of laminar flames	Larsson, G. Sheppard, C G W, Woolley, R		United Kingdom
Evaluation of secondary droplet size by extended PDF	M. Santini <sup>o</sup> , M. Rossmeissl*, G.E. Cossali <sup>o</sup> , M.Marengo <sup>o</sup> , K.-E. Wirth	Università degli Studi di Bergamo	Italy
Scalar transport from a point source in flows over a wavy wall.	Carsten Wagner Simon Kuhn Philipp Rudolf von Rohr	ETH Zurich	Switzerland
The Influence of Fuel Injection and Heat Release on Bulk Flow Structures in Direct-Injection, Swirl-Supported Diesel Engines	Paul Miles, Leif Hildingsson, Anders Hultqvist	Sandia National Laboratories	USA
Combined LIF and PIV measurements of breaking surface waves in a stratification	David Hann	University of Nottingham	UK
UNSTEADINESS IN EFFERVESCENT SPRAYS – MEASUREMENT AND EVALUATION USING COMBINED PIV-LIF TECHNIQUE	Jan Jedelsky, Miroslav Jicha	Brno University of Technology	Czech republic
Adaptation of PIV algorithms for high speed measurements. Application to a Couette flow in a grooved channel.	F. Billy, L. David, G. Pineau	Laboratoire d'Etudes Aérodynamiques	FRANCE
Investigation into the mean flame shape in a pent chamber spark ignition engine	A. A. Burluka, T. Hattrell, C. G. W. Sheppard	School of Mechanical Engineering	England
Stereo High Speed PIV Measurements behind an Artificial Heart Valve	R. Kaminsky <sup>1, 2, 3</sup> , S. Kallweit <sup>2</sup> , H.J. Weber <sup>3</sup> , A.P. Simons <sup>3</sup> , P. Verdonck <sup>1</sup>	University Gent	Belgium
Weighting the prior of a fluid dedicated optical flow estimator	D. Heitz, V. Navaza, J. Carlier, T. Corpetti and E. Mémin	Cemagref	France
Experimental Study By High-Speed Particle Image Velocimetry Of Unsteady Flame-Wall Interaction In Turbulent Combustion	Bastien BOUST, Julien SOTTON, Marc BELLENOUE	Laboratoire de Combustion et de Detonique	France
On the use of LDV measurements for in-vitro aerosol deposition studies	P.J. Mendes J.F. Pinto J.M.M. Sousa	Instituto Superior Técnico	Portugal
PIV analysis of flapping wing aerodynamics	Ulrich Scholz Christian J. Kaehler	TU Braunschweig	Germany
Simultaneous measurements of velocity and temperature in a T-junction by LDV and LIF	U. Andersson ( 1 ) J. Eriksson ( 1 ) J. Westin ( 1 ) P. Gjelstrup ( 2 ) 1 Vattenfall Utveckling AB 2 Dantec Dynamics A/S	Vattenfall Utveckling AB	Sweden
BUBBLE DYNAMICS IN A PROPELLER FLOW – A STUDY WITH DDPIV	F. Pereira E. Castano-Graff M. Gharib	INSEAN	Italy

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Aerodynamic Performance degradation induced by ice accretion. PIV technique assessment in Icing Wind Tunnel.	Fabrizio De Gregorio	CIRA	Italy
Analysis of Hydrogen Enriched Flames by Laser Diagnostics	A. Olivani, F. Cozzi, A. Coghe	Politecnico di Milano	Italy
Lagrangian velocity and acceleration measurements, PTVA, in quasi-two-dimensional electromagnetically controlled multi-scale flows	Simone Ferrari and Lionel Rossi	Universita' degli Studi di Cagliari	Italy
Characterization of vortex flow transition using PIV in the Couette Taylor system	N. ABCHA(1), N. Latrache, O. Crumeyrolle and I. Mutabazi	LMPG, Université du Havre	France
Equivalence ratio measurements in kerosene-fuelled LPP injectors using planar laser-induced fluorescence	Mikael Orain, Frederic Grisch, Hubert Verdier	ONERA	France
PIV and LIF combined measurements in a Rayleigh-Benard convection cell	Petracci A., Delfos R., Westerweel J.	TU Delft	The Netherlands
PIV Measurements of a Double Annular Jet for validation of numerical simulations	T. Broeckhoven, M. Brouns, S. Geerts, J. Vanherzeele, S. Vanlanduit, and C. Lacor	Vrije Universiteit Brussel	Belgium
Limitations of Gaussian Beam Property Based LDA-Velocity Profile Measurements	Gentarō Yamanaka, Stefan Becker, Franz Durst	LSTM-Erlangen	Germany
Volumetric measurement of vortical structures in the reattachment region of a laminar separation bubble using stereo scanning PIV	S. Burgmann, C. Brückner and W. Schröder	RWTH Aachen University	Germany
Investigation of Binary Drop Coalescence using Dual-Field PIV Technique	Jungyong Kim and Ellen K. Longmire	University of Minnesota	USA
New resolution limits in PIV image processing	Holger Nobach and Eberhard Bodenschatz	Cornell University	USA
Measurement of Lagrangian Acceleration Using the Laser Doppler Technique	M. Kinzel, H. Nobach, C. Tropea, E. Bodenschatz	TU-Darmstadt	Germany
Wall Shear Stress Measurements in a Turbulent Channel Flow	Gentarō YAMANAKA, Franz Durst, Stefan Becker	LSTM-Erlangen	Germany
Miniaturized Laser-Doppler-Anemometers for Space Applications	C. Fechtmann, M. Eggert and H. Müller	ZARM-Technik	Germany
The drag coefficients of multi-sized pulverised wood	Christine Mayer Chong Y. Wong Roman Weber Graham J. Nathan	University of Adelaide	Australia
Experimental characterization of flame wall interaction	Edgar Caetano Fernandes Nuno Manuel Rolo Creado	Instituto Superior Técnico	Portugal
PIV Flow Measurements in a Matched Refractive Index Packed Bed	Elvis Dominguez-Ontiveros Carlos Estrada-Perez Robert Barner Yassin A. Hassan	Texas A&M University	USA
ENHANCED PARTICLE TRACKING ALGORITHM BASED ON A MODIFIED	Chad N. Young David A. Johnson	University of Waterloo	Canada
HIGH-RESOLUTION RAYLEIGH IMAGING OF DISSIPATIVE STRUCTURES IN A TURBULENT JET FLAME	Jonathan H. Frank and Sebastian A. Kaiser	Sandia National Laboratories	USA
Laser-induced Luminescence Technique for the Measurement of Local Temperature Distributions in Thin Liquid Films	A. Schagen M. Modigell	Aachen University of Technology	Germany
Investigation of 3-D coherent structures in the turbulent cylinder wake using Tomo-PIV	F. Scarano, G.E. Elsinga, B.W. Van Oudheusden	Delft University of Technology	The Netherlands
A comparison between pulsed and continuous round jets	Parker K., Soria J., Cowling R., Mitchell D. Laboratory for Turbulence Research in Aerospace & Combustion (LTRAC) Department of Mechanical Engineering, Monash University, VIC 3800, Australia Palero V. Dpto. Fisica Aplicada Facultad de Ciencias, Universidad de Zaragoza Zaragoza, Spain	Monash University	Australia
EXPERIMENTAL STUDY OF BIOGAS COMBUSTION IN A GAS TURBINE CONFIGURATION	Yannick Lafay, David Vauchelles, Gilles Cabot, Abdelkrim Boukhalfa	CORIA UMR CNRS 6614	France
Application of Stereo-PIV to determination of turbulent kinetic energy balance in free jet	A.V. Bilsky, V.M. Dulin, D.M. Markovich and M.P. Tokarev	Institute of Thermophysics	Russia

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Fluid flow characteristics of a swirl jet impinging on flat plate	J.K. Abrantes and L.F.A. Azevedo	PUC-Rio	Brazil
Verification and Application of Fuel-Air-Ratio-LIF	Jochen Scholz, Markus Röhl, Tim Wiersbinski, Volker Beushausen	Laser-Laboratorium Goettingen e.V.	germany
APPLICATION OF THE TIME-SHIFT TECHNIQUE FOR SPRAY MEASUREMENT	A. Kretschmer (corresponding author), N. Damaschke, N. Semidetnov, C. Tropea	University of Technology	Germany
Simulation and experimental validation of an oil droplet colliding with an oil-water interface	Ulrich Miessner, Emil Coyajee, Harmen Slot, Ralph Lindken, Bendiks Jan Boersma and Rene Delfos	TU Delft	Netherlands
Measurements of flows in randomly packed beds using the particle image velocimetry	Adeline Tchikango Siagam, Catharina Knieke, Gunther Brenner	Clausthal University of Technology	Germany
Experimental assessment of Tomographic-PIV accuracy	G.E. Elsinga, B.W. van Oudheusden, F. Scarano	Delft University of Technology	The Netherlands
Determination of the mean dissipation rate of passive scalar and kinetic energy in a Partially Stirred Reactor(PaSR)	J.F. Krawczynski, B. Renou, P.E. Dimotakis and L. Danaila	UMR 6614 CORIA	France
Digital holography for micro-droplet diagnostics	Virginia Palero, M <sup>a</sup> Pilar Arroyo and Julio Soria	I3A-Universidad de Zaragoza	Spain
Two-way coupling in a diffusive gas-particles turbulence: settling velocity and turbulence modification	L. Vignal, V. Roig, L. Ben, J. Borée	IMFT (Institut de Mécanique des Fluides de Toulouse)	France
Calibrationless Aberration Correction through Active Wavefront Sampling (AWS) and Multi-Camera Imaging	Federico Frigerio and Douglas P. Hart	MIT	USA
Extensional Flow of Dilute and Semi-Dilute solutions of polyethylene oxide through Microfabricated Hyperbolic Contractions	Mónica S. Neves Oliveira Manuel A. Alves Gareth H. McKinley Fernando T. Pinho	CEFT, FEUP	Portugal
On the offset problem of center detection in angular SPIV calibration	H.LOUHICHI T.FOURNEL C.BARAT J.M.LAVEST	Laboratoire de Traitement de Signal et Instrumentation	France
Application of adaptive PIV interrogation in a hypersonic flow	R. Theunissen F.F.J. Schrijer F. Scarano M.L. Riethmuller	von Karman Institute for Fluid Dynamics	Belgium
Experimental injections into a physical model of the Human Ventricular System	A. Aroussi, M. Vloeberghs, L. Howden, D. Giddings	Nottingham University	UK
Experimental investigation on the effects of surfactant on turbulent flow in a flume	Roi Gurka, Alex Liberzon, Gad Hetsroni	University of western Ontario	Canada
Ultra-short pulses propagation through a strongly scattering medium	Cécile Calba, Thierry Girasole, Claude Rozé and Loïc Mées	CNRS	France
MEASUREMENT OF MICROCLIMATE WITHIN CLOTHING	Akira NARUMI and Tadashi KONISHI	Kanagawa Institute of Technology	JAPAN
Combination of advanced 2D PIV and Stereo Technique	Sara Nauri Mathieu Legrand Antonio Lecuona P. A. Rodriguez Jose Nogueira	Universidad Carlos III	Spain
Evaluating Scales by using Slotted Correlation in Cylinder flow	Tsuneaki Ishima, Gunma University Tomokazu Nomura, Honda R & D. Takeshi Sasaki, Student of Gunma University Yasushi Takahashi, Honda R & D. Tomio Obokata, Gunma University	Gunma University	JAPAN
Non-intrusive Temperature Measurement of Curved Surface Using Laser Interferometer and Computer Tomography	Takayuki Hirano, Tatsuya Kawaguchi, Isao Satoh and Takushi Saito	Tokyo institute of technology	Japan
Quantitative assessment of vortical structure parameters on the basis of sound and velocity field measurements	S.I. Shtork, E.C. Fernandes	Instituto Superior Técnico	Portugal

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High speed PIV and fluctuating heat transfer measurements of an impinging air jet	T. S. O'Donovan; D. B. Murray; A.A. Torrance	University of Dublin, Trinity College	Ireland
Investigation of wall bounded flows by means of miniaturized LDV flow sensor coupled with hot-film anemometry	J. Jehring, E.-S. Zanoun, C. Egbers, M. Kito, A. Wiener, C. Schultz, D. Suchland	Institut für Verkehrstechnik Fakultät Maschinenbau	Germany
High-Resolution MHz PIV System for Application to High Speed Flows	B.H. Timmerman, P.J. Bryanston-Cross, A. Skeen, P. Dunkley, D.J. Hunter, M. Graves	Optical Engineering Laboratory	United Kingdom
Passive Non-Intrusive Optical Diagnostics for Combustion	B.H. Timmerman, P.J. Bryanston-Cross	Optical Engineering Laboratory	United Kingdom
Time- Resolved description of a flame front propagating towards an inclined wall- the effect of local stretch on flame speed	Edgar C. Fernandes Ilidio V. Guerreiro	Instituto Superior Tecnico	Portugal
Recent developments in background oriented schlieren methods for rotor blade tip vortex measurements	K. Kindler, J. Bosbach, E. Goldhahn, M. Raffel, F. Leopold	Inst. for Aerodynamics and Flow Technology, German Aerospace Center (DLR)	Germany
PIV measurements of compressible vortex rings generated by a shock tube	J. Haertig, C. Rey, M. Havermann	French-German Research Institute of Saint-Louis (ISL)	France
On the stabilisation and spatial resolution of iterative PIV interrogation	F.F.J. Schrijer F. Scarano	Delft University of Technology	The Netherlands
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Concentration Measurements inside a Swirl Combustor Chamber Model	R. Palm et al	Darmstadt University of Technology	Germany
Measurements of the minimum elevation of nanoparticles by 3-D nanoscale-PTV using ratiometric evanescent wave imaging	Kenneth Kihm		U.S.A.
Observation of Fuel Behavior in a DI Gasoline Engine with changing Boosted Intake Pressure and Piston Shape	Gyung-Min Choi, Jeong-Jung Kang, Dong-Wook Kim, Eun-Seung Paek, Young-Sam Shim, Duck-Jool Kim	School of Mechanical Engineering	Korea
FLUID DYNAMICS OF PROSTHETIC HEART VALVES: COMPARISON BETWEEN LDA AND PIV TECHNIQUES	M. Rossi, U. Morbiducci, L. Scalise	Universita' Politecnica delle Marche	ITALY
VORTEX DYNAMICS DOWNSTREAM OF MECHANICAL PROSTHETIC HEART VALVE BY TIME-RESOLVED PIV	U. Morbiducci, M. Rossi, R. Kaminsky, L. Scalise, S. Kallweit	Universita' Politecnica delle Marche	ITALY
Three-dimensional, three-component velocity measurement in an inclined micro-round tube	Nejdet ERKAN, Kyosuke SHINOHARA and Koji OKAMOTO	University of Tokyo	Japan
Ray-tracing-based Stereoscopic PIV algorithm with misalignment correction	L.J.A. van Bokhoven and R.A.D. Akkermans	Eindhoven University of Technology	The Netherlands
The effect of the cross airflow on secondary atomization	D. Durão, A. L. N. Moreira and M. R. O. Panão	Instituto Superior Tecnico	Portugal
Nano-LIF Imaging for Zeta-Potential Distribution in Microchannel	Yutaka KAZOE and Yohei SATO	Keio University	JAPAN
Extension of the compressed interferometric particle sizing technique for three component velocity measurements	D. Sugimoto, K. Zarogoulidis, T. Kawaguchi, K. Matsuura, Y. Hardalupas, A.M.K.P. Taylor, K. Hishida	Keio University	Japan
Time-Resolved Velocity and pH Mapping in T-shaped Microchannel	Mitsuhisa ICHIYANAGI, Yohei SATO and Koichi HISHIDA	Keio University	Japan

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Measurement of the position of rotor blade vortices generated by a helicopter in free flight	F. Klinge, M. Hecklau, M. Raffel, J. Kompenhans, U. Göhmann	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)	Germany
Temporal Integrated Detection and Applications of fs-Pulse Scattering	S.Bakic;N.Damaschke;J.Kaiser;W.Elsässer; C.Tropea	Darmstadt University of Technology	Germany
PDA-Measurements in sprays of inhomogenous process-fluids: SNR as parameter for evaluation of results and basis for postprocessing-procedures	Patrick Menn, Günther Schulte	Universitaet Bremen	Germany
Reconstructed 3D Flame Structures in Noise-Controlled Swirl-Stabilized Combustor	Mamoru TANAHASHI, Shohei INOUE, Masayasu SHIMURA, Shohei TAKA, Gyung-Min CHOI and Toshio MIYAUCHI	Tokyo Institute of Technology	Japan
Development of stereoscopic Background Oriented Schlieren Method (BOS) and Laser Light Sheet technique (LLS) for study of Reynolds number effects on wing tip vortex positions under cryogenic conditions	F. Klinge, D. Pallek, J. Kompenhans	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center) DLR	Germany
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In-Situ Fuel Concentration Measurement Using an IR Spark Plug Sensor by Laser Infrared Absorption Method	Nobuyuki Kawahara, Eiji Tomita, Kenta Hayashi, Michihiko Tabata*, Kouhei Iwai* and Ryoji Kagawa* Department of Mechanical Engineering, Okayama University * Mazda Motor Corp.	Okayama University	JAPAN
MICROBUBBLE SIZING BY OUT-OF-FOCUS INTERFEROMETRIC LASER IMAGING TECHNIQUE	Tatsuya KAWAGUCHI, Isao SATOH and Takushi SAITO	Tokyo institute of technology	Japan
Measurements of Near Wall Turbulent Structure in a Microbubble Flow Using a Highly Magnifying Telemetric PIV/PTV System	Kazushi Aoki Koichi Hishida Yoshiaki Kodama	Faculty of Science and Technology, Keio University	Japan
Evanescant Molecular Tagging Technique for Electrokinetic Effects on Velocity Field in the Vicinity of Electrolyte-Glass Interface	Hiroki FUKUMURA Mitsuhsa ICHIYANAGI Yohei SATO	Faculty of Science and Technology, Keio University	Japan
3D wake structure of zigzagging or spiraling bubble by Digital Holography measurement	Yoshiyuki Tagawa, Shu Takagi, Yoichiro Matsumoto	The University of Tokyo	Japan
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A New Sensor for Temperature Measurement of Water by Laser Interferometry Technique	Eiji Tomita, Nobuyuki Kawahara and Yasuii Toda	Okayama University	Japan
The Control of Propane Combustion by CO2-laser Radiation	S.S. Vorontsov, P.K. Tretyakov, A.V. Tupikin	The Institute of Theoretical and Applied Mechanics SB RAS	Russia
Particle response to shock waves in solids: dynamic witness	M. J. Murphy and R. J. Adrian	Arizona State University	USA

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Multi-point cross-correlation for turbulent flow using Dynamic PIV data	Nejdet ERKAN (The University of Tokyo) Masaaki ISHIKAWA (The University of Ryukyus) Koji OKAMOTO (The University of Tokyo)		JAPAN
Spatio-temporal characteristics of the spray resulting from a liquid jet in crossflow	S. Thawley, D. Sykes, M. Brady, U. Vandsburger, and P. Vlachos	Virginia Tech	USA
Estimations of Turbulence Dissipation Rate in Inhomogeneous Anisotropic Flows Using	Olga Pierrakos, and Pavlos Vlachos	Virginia Tech	USA
Multiplane Scanning Stereo-PIV Measurement of Flow inside a Spiral Vortex Pulsatile Blood Pump	T. Yagi <sup>1,2</sup> , W. Yang <sup>2</sup> , D. Ishikawa <sup>1</sup> , H. Sudo <sup>1</sup> , K. Iwasaki <sup>3,4</sup> , M. Umezu <sup>1</sup> Integrative Bioscience and Biomedical Engineering, Waseda University, Tokyo, Japan 2 Division of Minerals, CSIRO, Melbourne, Australia 3 Institute for Biomedical Engineering, Waseda University, Tokyo Japan 4 Brigham and Women's hospital, Harvard Medical School, Boston, U.S.A.	Waseda University, Tokyo Japan	Japan
Study of a row of jets impinging a concave wall by classic and Stereoscopic PIV	Laurent-Emmanuel BRIZZI & Virginie GILARD	Laboratoire d'Etudes Aérodynamiques	FRANCE
The Influence of Boundary Conditions on Acoustic Transfer Function of Flames Stabilized in Mini-Burners	Edgar C. Fernandes Robert E. Leandro	Instituto Superior Tecnico	Portugal
High temperature behaviour of emulsion sprays studied by GSI technique	Calabria R., Chiariello F., Massoli P.	Istituto Motori CNR	Italy
Measuring the aerosol characteristics of the optimum insecticide spray	Yuji Ikeda, Atsushi Nishiyama, Seung Mo Kim Imagineering, Inc., Welv Rokko 2nd Bldg. 3F, Fukada, Nada, Kobe 657-0038, Japan Yoshihiro Horibe, Shigeki Takaki Fumakilla Limited., Ono-cho, Saeki-gun, Hiroshima 739-0494, Japan	Imagineering, Inc.	JAPAN
Accuracy assessment of image interpolation schemes for PIV from real images of particle	B. Lecordier, M. Trinité	Université INSA de Rouen	France
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Experimental Study of Density Effect On air Entrainment In Quasi Steady Gasoline Dense Sprays By F-PIV	Prosperi, Helie, Samson, Bazile		France
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IR-absorption technique to measure the temperature in S.I.E	Teruyuki Itoh	Nissan Research Center	JAPAN
DIGITAL PHASE MEASUREMENT INTERFEROMETRY: TECHNIQUES AND	D. Newport, M. Whelan, J. Garvey	University of Limerick	Ireland
PIV measurements of natural convection flow field in an electric oven	S.Ganapathi-subbu	General Electric	India
EXPERIMENTAL AND CFD STUDY OF THE EFFECTS OF DESIGN PARAMETRES ON REYNOLDS NUMBER IN A SHORT DURATION HYPERSONIC TEST FACILITY	Al-Falahi Amir, Yusaf T, & Yusoff M.Z		Malaysia
Liquid CO2 Boiling Behavior in a Microchannel Condenser	Nobuyoshi Tsuzuki, Takao Ishiduka, Tri Lam Ngo, and Yasuyoshi Kato	Tokyo Institute of Technology	Japan