

Programme of the 7th Workshop on Adaptive Optics for Industry and Medicine 2009.

Monday, June 8.

Opening session 10:00 - 12:00

Alexis Kudryashov – Chair

Welcome words from Mayor of Shatura region Mr. Andrey Keller and Rector of Moscow state Open University Prof. Edward Tsaturyan

Opening remarks from Alexis Kudryashov

Modular High-Speed Adaptive Optics System

Michael Helmbrecht, Carl Kempf, Raymond, Hairong Lei, Wei Xiong, Paul Pulaski, Daniel R. Neal

Hologram and image optimization using high resolution adaptive optics

Benoit Wattellier, Ivan Doudet

Adaptive Optics with a Liquid Mirror

Gleb Vdovin, Oleg Soloviev, Mikhail Loktev

Coffee: 12:00 – 12:30

Deformable mirrors - 12:30 – 13:30

Yudong Zhang – Chair

Miniaturized adaptive mirror for solid state laser resonators

Sven Verpoort, Ulrich Wittrock

Potentialities of the bimorph mirrors

A.G.Alexandrov, V.D.Dubikovski, A.V.Kudryashov, V.V.Samarkin

New highly flexible approach for deformable mirror

Roos Frederic

Lunch – Dinner in Russia – 13:30 – 15:00

Wavefront correctors - 15:00 – 16:20

Ulrich Wittrock – Chair

Modular adaptive deformable mirror technology based on electromagnetic actuators

Roger Hamelinck, Nick Rosielle, Maarten Steinbuch

Unimorph laser mirror based on LTCC

Claudia Bruchmann, Ramona Eberhardt, Erik Beckert, Sylvia E. Gebhardt, Andreas Tunnermann

Dynamic Holograms with Asymmetrical Fringe Profile: from Holographic Correction to Adaptive Optics
Vladimir Yu.Venediktov

New 19-channel mirror optimized for correction of low-order aberrations
Oleg Soloviev, Gleb Vdovin, Mikhail Loktev

Coffee: 16:20 – 16:50

Wavefront correctors - 16:50 – 17:50
Alexis Kudryashov - Chair

Comparison of Large Diameter Bimorph Mirrors for High Power Laser Applications
Wattellier Benoit, Ivan Doudet

Simulation of a flexible mirror performance in the problem of adaptive compensation for aberrations in optical system
V.A. Banakh, F.Yu. Kanev, D.S. Rytchkov

Recent developments in electromagnetic deformable mirror technology
Erika Odlund, Fabrice Harms, Franck Martins, Nicolas Chateau, Emeric Lavergne, Xavier Levecq

Welcome Party - 18:00 – 19:00
Dinner-supper – 18:30 – 19:30

Tuesday, June 9.

Adaptive Optics and human eye – 10:00 – 11:30
Alexis Kudryashov – Chair

History and future of adaptive optics for the eye (Invited talk)
Artal Pablo

Evaluation of a coupling algorithm between a pupil tracker and an adaptive optics retinal imaging system
Betul Sahin

Adaptive optics confocal scanning laser ophthalmoscope
Jing Lu, Hao Li, Ling Wei, Guohua Shi, Yudong Zhang

Clinically useful wide-field high-resolution retinal imaging with a dual-conjugate adaptive optics instrument
Zoran Popovic, Jorgen Thaug, Per Knutsson, Mette-Owner Petersen

Coffee: 11:30 – 12:00

Adaptive Optics and human eye – 12:00 – 13:30

Ulrich Wittrock - Chair

Subjective visual performance assessment with decentration higher-order aberrations correction through adaptive optics

Yun Dai, Xuejun Rao, Qian Liu, Lixia Xue, Wenhan Jiang

An update on AO characterization of the UC Davis AO-UHR-OCT system.

Robert J. Zawadzki, Julia W. Evans, Steven M. Jones, Donald T. Miller, Scot S. Olivier, John S. Werner

Latest progress of AO for human eye in IOE (Invited talk)

Yudong Zhang

Lunch: 13:30 – 15:00

Applications for adaptive optics 15:00 – 16:20

Zoran Popovic – Chair

260 W Single-Frequency Large Mode Photonic Crystal Fiber Amplifier for Guidestar Applications

Christopher Vergien

Correction of vortex laser beam in a closed-loop adaptive system with bimorph mirror

F.A. Starikov, V.P. Aksenov, V.V. Atuchin, I.V. Izmailov, F.Yu. Kanev, G.G. Kochemasov, M.O. Koltygin, S.M. Kulikov, A.N. Manachinsky, N.V. Maslov, I.S. Soldatenkov, S.A. Sukharev

Adaptive Optics for LEO Satellite-To-Ground Links

Markus Knapek

Adaptive control in a system including a beacon with the wavelength different from the wavelength of a corrected radiation

Feodor Kanev, Naylia Makenova, and Ekaterina Tsyro

Poster session – 16:20 – 18:30

Conference Banquet – 18:30 till ...

Wednesday June 10

Travel to the town of Shatura and visit of Adaptive Optics Lab of Moscow State Open University and Night N (opt) Ltd.

Reception sponsored by Night N (opt) Ltd

Invited Talk – Development of Adaptive Optics in Moscow State Open University and Night N (opt) Ltd.

Alexis Kudryashov

Adaptive Optical Systems – sometime during the day

Daniel Neal – Chair

Low Cost Embedded Adaptive Optics System based on Atom PC

I.Capraro, S. Bonora, C.Trestino, U. Bortolozzo, T.Occhipinti

Laser beam focusing by means of closed-loop adaptive optical system

Julia Sheldakova, Alexis Kudryashov, Vadim Samarkin, Alexey Rukosuev

B-spline basis for adaptive piezoelectric mirror shape reconstruction

Irina Sergievskaya, Santiago Royo and Miguel Ares

AFRL - High Power Fiber Laser Test Bed

Anthony D. Sanchez

Reception at Shatura major house

Thursday June 11

Adaptive optics for laser beam control – 10:00 – 11:30

Vadim Samarkin - Chair

Wavefront control and focal spot shaping of the LULI 100TW facility

by use of an optical adaptive closed-loop

Ji-ping Zou, Catherine Le Bris, Francois Simon, Sophie Baton, Benoit Wattellier, Ivan Doudet, Wiliam Boucher, Christophe Rousseaux

Wavefront correction in LFEX laser for Fast Ignition fusion experiment

T. Jitsuno, K. Sueda, N. Morio, S. Matsuo, J. Kawanaka, N. Miyanaga

Wavefront control in multiphoton microscopy

Juan Bueno, Emilio Gualda & Pablo Artal

Adaptive optical phasing in an ultrashort-pulse laser

N.K. Metzger

Coffee: 11:30 – 12:00

Adaptive optics for lasers - 12:00 – 13:20

Pablo Artal – Chair

Preliminary results on dynamic intra-cavity laser mode selection

Craig Long, Igor Litvin, Philip Loveday, Andrew Forbes

Femtosecond NIR Pulse shaping with double side actuated deformable mirror

S.Bonora, D.Brida, C. Manzoni, P.Villoresi, S. De Silvestri, G.Cerullo

Performance Characteristics of Solid-State Lasers with MEMS Mirrors

Walter Lubeigt

Hysteresis Compensation in Wavefront-sensor-less Adaptive Optics Systems

H. Song, R. Fraanje, G. Schitter, M. Verhaegen, G. Vdovin

Lunch: 13:30 – 15:00

Wavefront control and measurements 15:00 – 17:00

Takahisa Jitsuno - Chair

Determining wavefront curvature by the superposition of Bessel beams

Ruslan Vasilyev, Angela Dudley, Nikolai Khilo, Andrew Forbes, Piotr Ropot

High performance architecture for R&D in adaptive optics

Rooms Frederic

Wave aberrations in a spinning pipe gas lens

Cosmas Mafusire, Andrew Forbes

Close-loop adaptive optics system based on linear phase retrieval technology

Xinyang Li, Min Li, Bo Chen, Changhui Rao, Wenhan Jiang

Closing remarks – Alexis Kudryashov

Farewell dinner – 18:30 – 19:30

POSTERS

Shack-Hartmann wavefront sensor versus Fizeau interferometer for optical surfaces quality measurements

Alexis Kudryashov, Alexey Rukosuev, Julia Sheldakova

X-ray laser wavefront profile sensing by PDI sensor

Pavel Homer, Bedrich Rus, Jaroslav Nejd, Jiri Polan

A Mobile Adaptive Optics System for Compensation of Atmospheric Turbulence-Induced Phase Distortions

Ivo Buske

Novel wavefront sensor for ultrathin mirrors testing based on pinholes array

David Snopek

Evaluating the effect of high order aberrations on CSF and MTF for 4-mm pupil of human eyes

Zhao Hao-Xin, Xu Bing, Dai Yun, Yu Xiang, Zhou Jia-Wei, Zhang Yu-Dong, Zhou Yi-Feng, Jiang Wen-Han

Imaging a Moving Target: High-speed Imaging of the Photoreceptor Mosaic in Patients with Nystagmus

Brett Schroeder, Jungtae Rha, Pooja Godara, Alfredo Dubra, Joseph Carroll

Adaptive Optics Fundus Camera and Experiments of Continuous Imaging

Yudong Zhang, Hansheng Yang, Yun Dai, Wenhan Jiang

Investigation on Scattering Effect of the Ceramic Nd:YAG

Dafu Cui, Hongwei Gao, Chengming Li, Nan Zong, Qinjun Peng, Zuyan Xu

High-quality laser beam intensity profile formation by means of hybrid iterative algorithms

I.V.Ilyina, A.S.Mikryukov, T.Yu.Cherezova

The problems of Adaptive optical system to correct for the large aperture beam.

V.Ye.Zavalova, A.G.Aleksandrov, A.V.Kudryashov, A.L.Rukosuev, V.V.Samarkin, P.N.Romanov

High intensity laser beam wavefront characterization and correction at the Advanced Laser Light Source facility

S. Fourmaux, S. Payeur, C. Serbanescu, F. Martin, T. Ozaki, J. C. Kieffer, A. Alexandrov, A. Kudryashov