

Optical Design and Engineering VII

Monday - Thursday 14 - 17 May 2018

Conference Sessions At A Glance

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Monday Plenary Session
1: Design Methods I
2: Design Methods II
3: Design Methods III
 Tuesday Plenary Session
4: Design Methods IV
5: Design Solutions I
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 Poster Session
 Wednesday Plenary Session
8: Design Solutions IV
9: Freeforms I
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 International Day of Light Special Event
11: Freeforms III
12: Space Applications I
13: Space Applications II

Important Dates

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Abstract Due:
15 November 2017

Author Notification:
8 January 2018

Manuscript Due Date:
18 April 2018

Conference Committee

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Conference Chairs

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[Rolf Wartmann](#), Carl Zeiss Microscopy (Germany)
[Andrew P. Wood](#), Qioptiq Ltd. (United Kingdom)

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MONDAY 14 MAY
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Session Plen: Monday Plenary Session

Monday 14 May 2018
 8:15 AM - 10:10 AM
 Location: Europa 1

8:15 to 8:25 Welcome and Introductions


8:25 to 8:30: A.E. Conrady Award presented to **Philip J. Rogers**, VNF Ltd. (United Kingdom) 

10:00 to 10:10 (after Plenary presentations): 2018 Michael Kidger Memorial Scholarship Award

Current and future NASA telescopes (Plenary Presentation)
 Paper 10690-500

Time: 8:30 AM - 9:15 AM


Author(s): Joseph M. Howard, NASA Goddard Space Flight Ctr. (United States)

[Add To My Schedule](#) **Optics for Virtual Reality: state of the art and future challenges** (*Plenary Presentation*)

Paper 10690-502

Time: 9:15 AM - 10:00 AM

Author(s): Pablo Benítez, Univ. Politécnica de Madrid (Spain)

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Coffee Break 10:10 AM - 10:30 AM

Session 1: Design Methods I

Monday 14 May 2018

10:30 AM - 12:00 PM


Location: Europa 1

Session Chair: [Rolf Wartmann](#), Carl Zeiss Microscopy GmbH (Germany)**Image simulation using decomposition of the point spread function** (*Invited Paper*)

Paper 10690-1

Time: 10:30 AM - 11:00 AM


Author(s): Jim Schwiegerling, College of Optical Sciences, The Univ. of Arizona (United States)

[Add To My Schedule](#) **Practical use of saddle-point construction in lens design**

Paper 10690-2

Time: 11:00 AM - 11:20 AM


Author(s): Zhe Hou, Technische Univ. Delft (Netherlands); Irina L. Livshits, ITMO Univ. (Russian Federation); Florian Bociort, Technische Univ. Delft (Netherlands)

[Add To My Schedule](#) **Alternative approach to find start points for polychromatic correction**

Paper 10690-4

Time: 11:20 AM - 11:40 AM


Author(s): Norbert Schuster, SUSTAR-OPTICS (Germany)

[Add To My Schedule](#) **Stray light simulation and control in imaging systems including diffraction elements**

Paper 10690-5

Time: 11:40 AM - 12:00 PM

Author(s): Xiaotong Li, Zhaofeng Cen, Zhejiang Univ. (China)

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Lunch Break 12:00 PM - 1:50 PM

Session 2: Design Methods II

Monday 14 May 2018

1:50 PM - 3:30 PM

Location: Europa 1

Session Chair: [Alessio Taiti](#), Leonardo (Italy)**Lens optimization: making an engineering challenge more friendly****(Canceled)**

Paper 10690-6

Time: 1:50 PM - 2:10 PM

Author(s):

Polarization effect on wide angle lens relative illumination**(Canceled)**

Paper 10690-7

Time: 2:10 PM - 2:30 PM


Author(s):

**Use of advanced sensitivity approach to novel optical compensation methods**

Paper 10690-8

Time: 2:30 PM - 2:50 PM


Author(s): Mark C. Sanson, Keith Hanford, Coming Incorporated (United States)

[Add To My Schedule](#) **Simulation of straight and bent self-written waveguides in photopolymer mixture using phenomenological and diffusion models**

Paper 10690-9

Time: 2:50 PM - 3:10 PM

Author(s): Monali Suar, Maik Rahives, Eduard Reithmeier, Bernhard Roth , Hannoversches Zentrum für Optische Technologien (Germany), Leibniz Univ. Hannover (Germany)

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Coffee Break 3:30 PM - 4:00 PM

**Session 3:
Design Methods III**

Monday 14 May 2018

4:00 PM - 5:20 PM


Location: Europa 1

Session Chair: [Rolf Wartmann](#), Carl Zeiss Microscopy GmbH (Germany)**Phase space aberrations in general imaging systems**

Paper 10690-11

Time: 4:00 PM - 4:20 PM


Author(s): James Babington, Excelitas Qioptiq (United Kingdom)

[Add To My Schedule](#) **Modeling and experimental validation of highly astigmatic laser beams**

Paper 10690-13

Time: 4:20 PM - 4:40 PM


Author(s): Ulrich Kallmann, David Schill, Hochschule Furtwangen Univ. (Germany); Tom Davies, Photon Engineering LLC (United States)

[Add To My Schedule](#) **Optical design of a compact high power riflescope with a large zoom ratio**

Paper 10690-362

Time: 4:40 PM - 5:00 PM


Author(s): Kameron Tinkham, Xiaojing Huang, Wooyoun Kim, David Lippman, Angel Morales, Martin Tangari, Tianyi Yang, Julie L. Bentley, Univ. of Rochester (United States)

[Add To My Schedule](#) **Hybrid ray tracing method for photorealistic image synthesis in head-up displays**

Paper 10690-14

Time: 5:00 PM - 5:20 PM

Author(s): Igor S. Potemin, Dmitry Zhdanov, Andrey Zhdanov, Nikolay Bogdanov, ITMO Univ. (Russian Federation); Alexey Voloboy, M. V. Keldysh Institute of Applied Mathematics (Russian Federation)

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TUESDAY 15 MAY[Show All Abstracts](#)

**Session Plen:
Tuesday Plenary Session**

Tuesday 15 May 2018

8:00 AM - 8:45 AM

Location: Europa 1

Demystifying etendue (Plenary Presentation)

Paper 10690-501

Time: 8:00 AM - 8:45 AM

Author(s): Bill J. Cassarly, Synopsys, Inc. (United States)

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**Session 4:
Design Methods IV**

Tuesday 15 May 2018

9:00 AM - 10:20 AM

Location: Europa 1


Session Chair: [Andrew P. Wood](#), Excelitas Qioptiq (United Kingdom)

Induced 3rd order spherochromatism

Paper 10690-15

Time: 9:00 AM - 9:20 AM


Author(s): Andrea Berner, Carl Zeiss AG (Germany); Yueqian Zhang, Herbert Gross, Friedrich-Schiller-Univ. Jena (Germany)

[Add To My Schedule](#) **Finding the optimal starting configuration in optical design, when image plane location is a design parameter, using a diappoint-based error function**

Paper 10690-16

Time: 9:20 AM - 9:40 AM


Author(s): Sergio Barbero, Instituto de Óptica "Daza de Valdés" (Spain)

[Add To My Schedule](#) **Effects of striae inside optical glasses on optical systems**

Paper 10690-17

Time: 9:40 AM - 10:00 AM

Author(s): Steffen Reichel, Pforzheim Univ. (Germany); Peter Hartmann, Uwe Petzold, SCHOTT AG (Germany); Sandra Gärtner, Hochschule Darmstadt (Germany); Herbert Gross, Friedrich-Schiller-Univ. Jena (Germany)

[Add To My Schedule](#) **Investigation of striae tolerance in optical system**

Paper 10690-3

Time: 10:00 AM - 10:20 AM

Author(s): Yueqian Zhang, Friedrich-Schiller-Univ. Jena (Germany); Yen-Nan Chen, National Tsing Hua Univ. (Taiwan); Herbert Gross, Friedrich-Schiller-Univ. Jena (Germany); Peter Hartmann, SCHOTT AG (Germany); Steffen Reichel, Pforzheim Univ. (Germany)

[Add To My Schedule](#) **Coffee Break 10:20 AM - 10:40 AM****Session 5:
Design Solutions I**

Tuesday 15 May 2018

10:40 AM - 12:10 PM


Location: Europa 1

Session Chair: [Andrew P. Wood](#), Excelitas Qioptiq (United Kingdom)**Study of infrared optical payloads to be integrated in a nanosat (Invited Paper)**

Paper 10690-18

Time: 10:40 AM - 11:10 AM


Author(s): Guillaume Druart, ONERA (France); Renaud Allieux, Earthcube (France); Philippe Perrault, Vincent Lefranc, Nathan Cariou, Laurent Rousset-Rouvière, ONERA (France)

[Add To My Schedule](#) **Double-folded catadioptric lens for smartphone portraiture photography**

Paper 10690-19

Time: 11:10 AM - 11:30 AM


Author(s): Conor J. Sheil, Alexander V. Goncharov, National Univ. of Ireland, Galway (Ireland)

[Add To My Schedule](#) **Optical design of a hyperspectral drone advanced camera for soil monitoring using an electro-optical liquid crystal technology**

Paper 10690-20

Time: 11:30 AM - 11:50 AM


Author(s): Cristian Baccani, Guglielmo Rossi, Univ. degli Studi di Firenze (Italy); Federico Landini, INAF - Osservatorio Astrofisico di Arcetri (Italy); Teresa Salvatici, Marco Romoli, Maurizio Pancrazzi, Univ. degli Studi di Firenze (Italy); Mauro Focardi, Vladimiro Noce, INAF - Osservatorio Astrofisico di Arcetri (Italy); Sandro Moretti, Nicola Casagli, Univ. degli Studi di Firenze (Italy)

[Add To My Schedule](#) **Realization of a high resolution MEMS spectrochip in visible and near infrared range for home healthcare, food safety, and IoT applications**

Paper 10690-21

Time: 11:50 AM - 12:10 PM

Author(s): Cheng-Hao Ko, SpectroChip Inc. (Taiwan), National Taiwan Univ. of Science and Technology (Taiwan)

[Add To My Schedule](#) **Lunch Break 12:10 PM - 1:30 PM****Session 6:
Design Solutions II**

Tuesday 15 May 2018

1:30 PM - 3:20 PM

Location: Europa 1


Session Chair: [Simon Thibault](#), Univ. Laval (Canada)

Integrating a compact multichannel cryogenic infrared camera in an operational detector dewar cooler assembly (*Invited Paper*)

Paper 10690-22

Time: 1:30 PM - 2:00 PM

Author(s): Florence de la Barrière, Guillaume Druart, Nicolas Guérineau, Frédéric Champagnat, Aurélien Plyer, ONERA (France); Serge Magli, SOFRADIR (France); Gilles Lasfargues, CEA-LETI (France)

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System design of large optical communication antennas

Paper 10690-23

Time: 2:00 PM - 2:20 PM

Author(s): Hans J. Kärcher, Farroukh Peykar, MT Mechatronics GmbH (Germany)


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Potential performance loss and compensation techniques of a lens under ionizing radiations

Paper 10690-24

Time: 2:20 PM - 2:40 PM

Author(s): Cyprien Muller, Lab. Hubert Curien (France), Commissariat à l'Énergie Atomique (France); Thierry Lépine, Timothé Allanche, Aziz Boukenter, Lab. Hubert Curien (France); Philippe Paillet, Commissariat à l'Énergie Atomique (France); Sylvain Girard, Youcef Ouerdane, Lab. Hubert Curien (France)


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Diffraction optical elements for generation and transformation of structured laser beams

Paper 10690-25

Time: 2:40 PM - 3:00 PM

Author(s): Alexey P. Porfirev, Samara Univ. (Russian Federation); Svetlana Khonina, Russian Academy of Sciences (Russian Federation); Sergey Fomchenkov, Samara Univ. (Russian Federation)


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Comparison of exact scan patterns of different configurations of rotational Risley prisms

Paper 10690-26

Time: 3:00 PM - 3:20 PM

Author(s): Virgil-Florin Duma, Alexandru-Lucian Dimb, Aurel Vlaicu Univ. of Arad (Romania)

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Coffee Break 3:20 PM - 3:50 PM

Session 7: Design Solutions III

Tuesday 15 May 2018

3:50 PM - 5:50 PM

Location: Europa 1


Session Chair: [Richard N. Youngworth](#), Riyo LLC (United States)

Interferometer design and method for measurement of homogeneity of lenses

Paper 10690-27

Time: 3:50 PM - 4:10 PM

Author(s): Beate Boehme, Carl Zeiss AG (Germany)


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Two iris imaging over an extended depth of field with a mobile phone camera

Paper 10690-28

Time: 4:10 PM - 4:30 PM

Author(s): Niamh M. Fitzgerald, National Univ. of Ireland, Galway (Ireland); Christopher Dainty, FotoNation Ltd. (Ireland); Alexander V. Goncharov, National Univ. of Ireland, Galway (Ireland)


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Optical design of ZEISS ForTune photo mask tuning system: how to generate diffraction-limited laser foci in thick specimens

Paper 10690-29

Time: 4:30 PM - 4:50 PM

Author(s): Markus Seesselberg, Carl Zeiss AG (Germany); Vladimir Dmitriev, Uri Stern, Carl Zeiss SMS Ltd. (Israel); Joachim Welte, Carl Zeiss SMT GmbH (Germany)

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Design of TMC wavefront coding system based on user defined surface mask plate

Paper 10690-30

Time: 4:50 PM - 5:10 PM

Author(s): Xiaohu Guo, China North Vehicle Research Institute (China); Tielin Lu, Instrumentation Technology and Economy Institute (China); Jingjing Zhu,

Weimei Zhu, Meng Guo, Zuming Kang, Xiaoce Sun, Ji Zhao, China North Vehicle Research Institute (China); Lingqin Kong, Beijing Institute of Technology (China); Renna Sa, Inner Mongolia HuaDian BaYin Wind Power Ltd. (China)


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1 × 8 green light intensity splitter based on gallium-nitride slot waveguide in MMI structure

Paper 10690-31

Time: 5:10 PM - 5:30 PM

Author(s): Dror Malka, Holon Institute of Technology (Israel); Moshe Ran, MostlyTek Ltd. (Israel)

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Optical design of the post focal relay of MAORY

Paper 10690-51

Time: 5:30 PM - 5:50 PM

Author(s): Matteo Lombini, INAF - Osservatorio Astronomico di Bologna (Italy); Demetrio Magrin, INAF - Osservatorio Astronomico di Padova (Italy); Mauro Patti, INAF - Osservatorio Astronomico di Bologna (Italy); Davide Greggio, INAF - Osservatorio Astronomico di Padova (Italy); Fausto Cortecchia, Emiliano Diolaiti, INAF - Osservatorio Astronomico di Bologna (Italy); Vincenzo De Caprio, INAF - Osservatorio Astrofisico di Capodimonte (Italy); Adriano De Rosa, INAF - Osservatorio di Astrofisica e Scienza dello Spazio di Bologna (Italy); Edoardo Radaelli, Marco Riva, INAF - Osservatorio Astrofisico di Brera (Italy); Paolo Cillegi, INAF - Osservatorio Astronomico di Bologna (Italy); Simone Esposito, INAF - Osservatorio Astrofisico di Arcetri (Italy); Philippe Feautrier, Institut de Planétologie et d'Astrophysique de Grenoble (France); Roberto Ragazzoni, INAF - Osservatorio Astronomico di Padova (Italy)

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Session PTue: Poster Session

Tuesday 15 May 2018

6:00 PM - 7:30 PM

Location: Foyer Connecting Hall 4 to Hall 3


Conference attendees are invited to attend the joint poster session to network, enjoy light refreshments, and view the poster papers. Attendees are required to wear their conference registration badge. Authors of poster papers will be present to answer questions concerning their papers. Poster authors must set up their poster between 10:00 and 16:00 on Tuesday 15 May. [View poster presentation guidelines.](#)

Radiation-resistant television system for articulated manipulator arm

Paper 10690-56

Time: 6:00 PM - 7:30 PM

Author(s): Radda A. Iureva, Andrei S. Timko, ITMO Univ. (Russian Federation)


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Optoelectronic methods and tools for pipeline's internal surface diagnosis

Paper 10690-57

Time: 6:00 PM - 7:30 PM

Author(s): Radda A. Iureva, Andrei S. Timko, Nadezhda K. Maltseva, ITMO Univ. (Russian Federation); Alexandr V. Ilinsky, S.I. Vavilov State Optical Institute (Russian Federation); Anastasiya S. Chernaya, ITMO Univ. (Russian Federation)


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Design and analysis of a simple augmented reality optical system with AMOLED microdisplay

Paper 10690-58

Time: 6:00 PM - 7:30 PM

Author(s): Vitaly Sidorov, Galina E. Romanova, ITMO Univ. (Russian Federation)


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An optical system for a selective laser melting technology

Paper 10690-59

Time: 6:00 PM - 7:30 PM

Author(s): Aleksandr Kononov, Helen A. Tsyganok, ITMO Univ. (Russian Federation)


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Temperature and coupling field analysis of ring resonator

Paper 10690-60

Time: 6:00 PM - 7:30 PM

Author(s): Xudong Yu, Guangfeng Lu, Xuezhi Dai, Gao Na, National Univ. of Defense Technology (China)


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Design of the augmented reality system with the smartphone as a source of image

Paper 10690-61

Time: 6:00 PM - 7:30 PM

Author(s): Galina E. Romanova, Tatiana A. Koneva, ITMO Univ. (Russian Federation)

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Afocal compensators of optical systems aberrations

Paper 10690-62

Time: 6:00 PM - 7:30 PM

Author(s): Vasilisa Ezhova, Lev Andreev, ITMO Univ. (Russian Federation)


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Optical design of a reflective omnidirectional optical system to be used simultaneously in visible and LWIR wavelength range

Paper 10690-63

Time: 6:00 PM - 7:30 PM

Author(s): Yun Jae Ju, Kyu Hang Lee, Jae Heung Jo, Hannam Univ. (Korea, Republic of)


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Analysis and composing principles for HMD optics based on FLCOS and AMOLED

Paper 10690-64

Time: 6:00 PM - 7:30 PM

Author(s): Galina E. Romanova, Aleksei S. Garshin, Alexey V. Bakholdin, Vladimir N. Vasilyev, Anatoly V. Shukalov, ITMO Univ. (Russian Federation)


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Research methods for comparison of reconstructed by a hologram projector Fresnel images

Paper 10690-65

Time: 6:00 PM - 7:30 PM

Author(s): Kseniia V. Ezhova, Duy Hung Nguyen, Oleg Nikanorov, ITMO Univ. (Russian Federation)


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Design of the HMD systems based on AMOLED display with curved combiner

Paper 10690-66

Time: 6:00 PM - 7:30 PM

Author(s): Aleksei S. Garshin, Galina E. Romanova, Alexey V. Bakholdin, ITMO Univ. (Russian Federation); Aleksandr I. Eφος, JSC Elektroavtomatika Design Bureau n.a. P.A. Efimov (Russian Federation)


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Optical design and unification of optical systems of objectives for microscopes

Paper 10690-67

Time: 6:00 PM - 7:30 PM

Author(s): Dmitry N. Frolov, Olga A. Vinogradova, Labor-Microscopes (Russian Federation); Vladimir N. Frolov, Pavel S. Vakulov, JSC NPP "AME" (Russian Federation)


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Parametric model of an optical system consisting of two and three reflecting surfaces and its analysis

Paper 10690-70

Time: 6:00 PM - 7:30 PM

Author(s): Kseniia V. Ezhova, Victor Zverev, Irina Tymoshchuk, Anton Chuhlamov, Dmitriy Fedorenko, Andrey Veremenko, ITMO Univ. (Russian Federation)


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Advanced optical designs of curved detectors-based two-mirrors unobscured telescopes

Paper 10690-71

Time: 6:00 PM - 7:30 PM

Author(s): Eduard R. Muslimov, Aix-Marseille Univ. (France); Emmanuel Hugot, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France); Simona Lombardo, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France); Melanie Roulet, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France); Thibault Behaghel, Lab. d'Astrophysique de Marseille (France), CEA-LETI (France), Ctr. National de la Recherche Scientifique (France); Marc Ferrari, Wilfried Jahn, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France)


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Optical design of a holographic head-mounted display with enhanced efficiency

Paper 10690-73

Time: 6:00 PM - 7:30 PM

Author(s): Ilya Guskov, Kazan National Research Technical Univ. A.N. Tupoleva - KAI (Russian Federation); Eduard R. Muslimov, Aix-Marseille Univ. (France)


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Optical design of imaging spectrometer for atmosphere monitoring from near-Earth orbit

Paper 10690-75

Time: 6:00 PM - 7:30 PM

Author(s): Yury Dobrolenskiy, Ilya Dziuban, Space Research Institute (Russian Federation); Yuriy Ivanov, Ivan Syniavskiy, The National Academy of Sciences of Ukraine (Ukraine); Dmitry Ionov, Anatoly Poberovsky, Saint Petersburg State Univ. (Russian Federation); Oleg Korablev, Space Research Institute (Russian Federation); Anna Fedorova, Space Research Institute of Russian Academy of Sciences (Russian Federation); Nikita Vyazovetskiy, Space Research Institute (Russian Federation)


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Point spread function modeling for a free space optical system

Paper 10690-76

Time: 6:00 PM - 7:30 PM

Author(s): Fei Zeng, Fengyun He, Nan Zhao, Yanfeng Qiao, Changchun Institute of Optics, Fine Mechanics and Physics (China)

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Optimization of the uniformity of brightness distribution of abstract images with a high degree of self-similarity

Paper 10690-77

Time: 6:00 PM - 7:30 PM


Author(s): Nikolai V. Matveev, Galina E. Romanova, Irina Ampleeva, Alena Guseva, ITMO Univ. (Russian Federation)

[Add To My Schedule](#) **MAORY optical design analysis and tolerances**

Paper 10690-78

Time: 6:00 PM - 7:30 PM


Author(s): Mauro Patti, Matteo Lombini, INAF - Osservatorio Astronomico di Bologna (Italy); Demetrio Magrin, Davide Greggio, INAF - Osservatorio Astronomico di Padova (Italy); Emiliano Diolaiti, Fausto Cortecchia, INAF - Osservatorio Astronomico di Bologna (Italy); C. Arcidiacono, INAF - Osservatorio di Astrofisica e Scienza dello spazio (Italy); Paolo Ciliegi, INAF - Osservatorio Astronomico di Bologna (Italy); Philippe Feautrier, Institut de Planétologie et d'Astrophysique de Grenoble (France); Roberto Ragazzoni, INAF - Osservatorio Astronomico di Padova (Italy); Simone Esposito, INAF - Osservatorio Astrofisico di Arcetri (Italy)

[Add To My Schedule](#) **Simulative experimental research on vibration compensation of satellite platform based on fiber-coupling using FFT-estimated method**

Paper 10690-79

Time: 6:00 PM - 7:30 PM


Author(s): Mengnan Li, Da An, Zhuoying Zeng, China Academy of Electronic and Information Technology (China)

[Add To My Schedule](#) **Developing and testing for the camera lens system for total solar eclipse observation in 2017**

Paper 10690-80

Time: 6:00 PM - 7:30 PM


Author(s): Jihun Kim, Seonghwan Choi, Ji-Hye Baek, Jongyeob Park, Su-Chan Bong, Bi-Ho Jang, Sung-Joon Park, Heesu Yang, Kyungsuk Cho, Korea Astronomy and Space Science Institute (Korea, Republic of)

[Add To My Schedule](#) **Development of software for production of design documentation for aspherical optical components**

Paper 10690-81

Time: 6:00 PM - 7:30 PM


Author(s): Anastasiya D. Kozhina, Nadezhda D. Tolstoba, ITMO Univ. (Russian Federation)

[Add To My Schedule](#) **Simulations and experimental control of x-ray deformable mirror**

Paper 10690-83

Time: 6:00 PM - 7:30 PM


Author(s): Chun Xie, Qi Chen, Zhong Zhang, Tongji Univ. (China)

[Add To My Schedule](#) **Use of computer graphics methods for efficient stray light analysis in optical design**

Paper 10690-84

Time: 6:00 PM - 7:30 PM


Author(s): Dmitry Zhdanov, Igor S. Potemin, Andrey Zhdanov, ITMO Univ. (Russian Federation); Alexey Voloboy, M. V. Keldysh Institute of Applied Mathematics (Russian Federation)

[Add To My Schedule](#) **Options of lightweight mirror design and mounting such mirrors in telescope**

Paper 10690-85

Time: 6:00 PM - 7:30 PM


Author(s): Darya Butova, Nadezhda D. Tolstoba, ITMO Univ. (Russian Federation); A.G. Fleysheer, V.D. Starichenkova, S.I. Vavilov State Optical Institute (Russian Federation)

[Add To My Schedule](#) **The benefits of a vertically integrated optical systems supplier**

Paper 10690-87

Time: 6:00 PM - 7:30 PM


Author(s): Daniel Staloff, Corning Tropol Corp. (United States)

[Add To My Schedule](#) **A lightweight mirror made of a magnesium alloy for space-borne telescopes and instruments**

Paper 10690-88

Time: 6:00 PM - 7:30 PM


Author(s): Keigo Enya, Institute of Space and Astronautical Science (Japan); Okiharu Kirino, Hiroyuki Nakagawa, Crystal Optics Inc. (Japan); Yoshihito Kawamura, Kumamoto University (Japan); Tomoyasu Yamamuro, Optcraft (Japan)

[Add To My Schedule](#) **Infrared structure light projector design for 3D sensing**

Paper 10690-91

Time: 6:00 PM - 7:30 PM

Author(s): Bohan Lyu, Bohan Photonics (Taiwan); Meng-Ko Tsai, Chih-Sheng Chang, Himax Technologies, Inc. (Taiwan)


[Add To My Schedule](#) **Analysis of Seidel aberration coefficients of thick lens with arbitrary focal length**

Paper 10690-92

Time: 6:00 PM - 7:30 PM

Author(s): Antonín Mikš, Jirí Novák, Pavel Novák, Petr Pokorný, Filip Smejkal, Czech Technical Univ. in Prague (Czech Republic)



[Add To My Schedule](#) **Off-axis surface tolerance analysis: tips and tricks**

Paper 10690-93

Time: 6:00 PM - 7:30 PM


Author(s): Vania Da Deppo, CNR-IFN Padova (Italy), INAF - Osservatorio Astronomico di Padova (Italy)

[Add To My Schedule](#) **Design and analysis of silicon ring resonator for bio-sensing application**

Paper 10690-94

Time: 6:00 PM - 7:30 PM


Author(s): Shwetha M., Nawa Krishna Reddy, Sai Vidya Institute of Technology (India); Prasant Kumar Pattnaik, BITS Pilani (India); Narayan K., Sai Vidya Institute of Technology (India)

[Add To My Schedule](#) **Optical design for the Giant Magellan Telescope Multi-object Astronomical and Cosmological Spectrograph (GMACS): design methodology, issues, and trade-offs**

Paper 10690-95

Time: 6:00 PM - 7:30 PM


Author(s): Rafael A.S. Ribeiro, Univ. de São Paulo (Brazil); Damien Jones, Prime Optics (Austria); Luke M. Schmidt, Texas A&M Univ. (United States); Keith Taylor, Instruments4 (United States); Erika Cook, Darren DePoy, Texas A&M Univ. (United States); Daniel M. Faes, Univ. de São Paulo (Brazil); Cynthia Froning, Texas A&M Univ. (United States); Tae-Geun Ji, Hye-In Lee, Kyung Hee Univ. (Korea, Republic of); Jennifer L. Marshall, Texas A&M Univ. (United States); Claudia Mendes de Oliveira, Univ. de São Paulo (Brazil); Soojong Pak, Kyung Hee Univ. (Korea, Republic of); Casey Papovich, Travis Prochaska, Texas A&M Univ. (United States); Aline Souza, Univ. de São Paulo (Brazil)

[Add To My Schedule](#) **A modified Gerchberg-Saxton algorithm for design diffractive optical elements generating light distributions with submicron features**

Paper 10690-96

Time: 6:00 PM - 7:30 PM


Author(s): Alexey P. Porfirev, Sergey Fomchenkov, Samara Univ. (Russian Federation)

[Add To My Schedule](#) **Development of a simple LDV system for tube micro particles flow rate measurement**

Paper 10690-98

Time: 6:00 PM - 7:30 PM

Author(s): Keng-Ming Chang, Shu-Sheng Lee, National Taiwan Ocean Univ. (Taiwan); Chun-Hsiung Wang, Yu-Hsiang Hsu, Wen-Jong Wu, Chih-Kung Lee, National Taiwan Univ. (Taiwan)

[Add To My Schedule](#) **WEDNESDAY 16 MAY**[Show All Abstracts](#)

Session Plen: Wednesday Plenary Session

Wednesday 16 May 2018

8:00 AM - 8:45 AM


Location: Europa 1

High performance flat optics (Plenary Presentation)

Paper 10690-503

Time: 8:00 AM - 8:45 AM

Author(s): Federico Capasso, Harvard John A. Paulson School of Engineering and Applied Sciences (United States)

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Session 8: Design Solutions IV

Wednesday 16 May 2018

9:00 AM - 10:00 AM


Location: Europa 1

Session Chair: [Rolf Wartmann](#), Carl Zeiss Microscopy GmbH (Germany)**Design, manufacturing, and opto-mechanical considerations for multimodal micro-endoscope featuring optical coherence microscopy, multiphoton microscopy, and visible navigation**

Paper 10690-32

Time: 9:00 AM - 9:20 AM


Author(s): David Vega, Gabriella Romano, Jennifer K. Barton, The Univ. of Arizona (United States)

[Add To My Schedule](#) **Design of a dual wavelength digital holographic imaging system for the examination of layered structures**

Paper 10690-33

Time: 9:20 AM - 9:40 AM

Author(s): John C. McFarland, Ting Chean Khoo, Anna Sharikova, Alexander T. Khmaladze, Univ. at Albany (United States)

[Add To My Schedule](#) **Modeling of hybrid polymer optical systems**

Paper 10690-34

Time: 9:40 AM - 10:00 AM

Author(s): Anna Voznesenskaya, Alisa S. Ekimenkova, ITMO Univ. (Russian Federation)

[Add To My Schedule](#) 

Coffee Break 10:00 AM - 10:30 AM

**Session 9:
Freeforms I**

Wednesday 16 May 2018

10:30 AM - 12:20 PM

Location: Europa 1

Session Chair: [Thierry Lépine](#), Lab. Hubert Curien (France)**The method of confocal mirror design** (*Invited Paper*)

Paper 10690-35

Time: 10:30 AM - 11:00 AM


Author(s): José Sasián, College of Optical Sciences, The Univ. of Arizona (United States)

[Add To My Schedule](#) **Micro objectives with extremely large field of view**

Paper 10690-36

Time: 11:00 AM - 11:20 AM

Author(s): Bo Chen, Simon Thiele, Univ. Stuttgart (Germany); Min Xu, Fudan University (China); Alois M. Herkommer, Univ. Stuttgart (Germany)

[Add To My Schedule](#) **Ready to use a multi-focal system based on Alvarez lenses**

Paper 10690-37

Time: 11:20 AM - 11:40 AM

Author(s): Anna Möhl, Sven Wickenhagen, Timo Kunisch, Ulrike Fuchs, asphericon GmbH (Germany)

[Add To My Schedule](#) **Aberration fields of anamorphic systems**

Paper 10690-38

Time: 11:40 AM - 12:00 PM


Author(s): Dennis Ochse, JENOPTIK Optical Systems GmbH (Germany)

[Add To My Schedule](#) **3D printed optical lens design with additional degrees of freedom**

Paper 10690-99

Time: 12:00 PM - 12:20 PM

Author(s): Don B. Conkey, John P. Harmon, Voxel, Inc. (United States)

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Lunch Break 12:20 PM - 1:50 PM

**Session 10:
Freeforms II**

Wednesday 16 May 2018

1:50 PM - 3:00 PM


Location: Europa 1

Session Chair: [Herbert Gross](#), Friedrich-Schiller-Univ. Jena (Germany)**Application of particle swarm optimization to the automatic design of optical systems** (*Invited Paper*)

Paper 10690-39

Time: 1:50 PM - 2:20 PM


Author(s): Christoph Menke, Carl Zeiss AG (Germany)

[Add To My Schedule](#) **Design for manufacture of a varifocal rotation optics**

Paper 10690-40

Time: 2:20 PM - 2:40 PM

Author(s): Ingo Sieber, Peter Stiller, Daniel Moser, Ulrich Gengenbach, Karlsruher Institut für Technologie (Germany)

[Add To My Schedule](#) **Zernike surface contributions as an assisting tool for designing freeform optical systems**

Paper 10690-41

Time: 2:40 PM - 3:00 PM

Author(s): Mateusz Oleszko, Herbert Gross, Friedrich-Schiller-Univ. Jena (Germany)

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Coffee Break 3:00 PM - 3:30 PM

International Day of Light Special Event

Wednesday 16 May 2018

4:00 PM - 6:00 PM

Location: Foyer Room Europa

THURSDAY 17 MAY[Show All Abstracts](#)

**Session 11:
Freeforms III**

Thursday 17 May 2018

8:30 AM - 10:20 AM

Location: Europa 1


Session Chair: [Laurent Mazuray](#), Airbus Defence and Space (France)

Three-mirror freeform imagers

Paper 10690-43

Time: 8:30 AM - 8:50 AM


Author(s): Jonathan C. Papa, Univ. of Rochester (United States); Joseph M. Howard, NASA Goddard Space Flight Ctr. (United States); Jannick P. Rolland, Univ. of Rochester (United States)

[Add To My Schedule](#) **Aberration balancing in a two mirror freeform optical system with freeform GRIN corrector elements (Invited Paper)**

Paper 10690-365

Time: 8:50 AM - 9:20 AM


Author(s): Julie L. Bentley, Univ. of Rochester (United States); John P. Harmon, Don B. Conkey, Voxel, Inc. (United States); Joseph M. Howard, Garrett J. West, NASA Goddard Space Flight Ctr. (United States)

[Add To My Schedule](#) **Additively manufactured freeform gradient optics**

Paper 10690-364

Time: 9:20 AM - 9:40 AM


Author(s): John P. Harmon, Voxel, Inc. (United States); Don B. Conkey, Voxel, Inc (United States); George M. Williams, Voxel, Inc. (United States); Julie L. Bentley, Univ. of Rochester (United States)

[Add To My Schedule](#) **Investigation of optimization strategy and freeform location on multi-surface systems**

Paper 10690-44

Time: 9:40 AM - 10:00 AM


Author(s): Chang Liu, Friedrich-Schiller-Univ. Jena (Germany); Herbert Gross, Friedrich-Schiller-Univ. Jena (Germany), Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany)

[Add To My Schedule](#) **Spectrographs with holographic gratings on freeform surfaces: design approach and application for the LUVOIR mission**

Paper 10690-45

Time: 10:00 AM - 10:20 AM

Author(s): Eduard R. Muslimov, Aix-Marseille Univ. (France), Lab. d'Astrophysique de Marseille (France), Ctr. National de la Recherche Scientifique (France); Marc Ferrari, Emmanuel Hugot, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France); Jean-Claude R. Bouret, Aix Marseille Univ. CNRS, CNES, LAM (France); Coralie Neiner, Observatoire de Meudon, LESIA (France); Simona Lombardo, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France); Gerard Lemaitre, Robert Grange, Lab. d'Astrophysique de Marseille (France), Aix Marseille Univ. (France), Ctr. National de la Recherche Scientifique (France)

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Coffee Break 10:20 AM - 10:50 AM

Session 12: Space Applications I

Thursday 17 May 2018
10:50 AM - 12:10 PM
Location: Europa 1


Session Chair: [Laurent Mazuray](#), Airbus Defence and Space (France)

Optical and mechanical designs of the multi-band SWIR receiver for the Lunar Flashlight CubeSat mission

Paper 10690-46

Time: 10:50 AM - 11:10 AM

Author(s): Quentin Vinckier, Jet Propulsion Lab. (United States); Karlton Crabtree, Photon Engineering LLC (United States); Megan Gibson, Christopher Smith, Sierra Lobo, Inc. (United States); Udo Wehmeier, Paul Hayne, Robert G. Sellar, Jet Propulsion Lab. (United States)


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Sentinel-5 short-wave infrared spectrometer optical design

Paper 10690-47

Time: 11:10 AM - 11:30 AM

Author(s): Alessandro Boni, Alessio Taiti, Alessandro Bini, Claudio Pasqui, Leonardo (Italy)


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Integration of the x-ray silicon pore optics of the ATHENA space mission

Paper 10690-48

Time: 11:30 AM - 11:50 AM

Author(s): Dervis Vernani, Elisabetta Rugi, Thales Alenia Space Switzerland (Switzerland); Marcos Bavdaz, Eric Wille, European Space Agency (Netherlands); Steffen Blum, Thibault Seure, Thales Alenia Space Switzerland (Switzerland)


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The optical design of the MAJIS instrument on board of the JUICE mission

Paper 10690-49

Time: 11:50 AM - 12:10 PM

Author(s): Irene Guerri, Anna Fabbri, Leonardo Tommasi, Alessio Taiti, Leonardo (Italy); Marilena Amoroso, Raffaele Mugnuolo, Agenzia Spaziale Italiana (Italy); Gianrico Filacchione, INAF - Istituto di Astrofisica e Planetologia Spaziali (Italy); Sergio Fonti, Univ. del Salento (Italy); Giuseppe Piccioni, INAF - Istituto di Astrofisica e Planetologia Spaziali (Italy); Bortolino Saggini, Politecnico di Milano (Italy); Federico Tosi, Massimo Zambelli, INAF - Istituto di Astrofisica e Planetologia Spaziali (Italy)

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Lunch Break 12:10 PM - 1:40 PM

Session 13: Space Applications II

Thursday 17 May 2018
1:40 PM - 2:20 PM
Location: Europa 1


Session Chair: [Laurent Mazuray](#), Airbus Defence and Space (France)

Optical design of NEID: the new exoplanet finding spectrometer at the WIYN telescope

Paper 10690-50

Time: 1:40 PM - 2:00 PM

Author(s): Christian Schwab, Macquarie Univ. (Australia); Andrew Rakich, GMTO Corp. (United States); Qian Gong, NASA Goddard Space Flight Ctr. (United States); Samuel Halverson, Univ. of Pennsylvania (United States); Arpita Roy, Caltech (United States); Ryan Terrien, Carleton College (United States); Andrew Monson, Eric Levi, Paul Robertson, The Pennsylvania State Univ. (United States); Julian Stuermer, The Univ. of Chicago (United States); Yulia V. Gurevich, Univ. Heidelberg (Germany); Chad Bender, The Univ. of Arizona (United States); Cullen Blake, Univ. of Pennsylvania (United States); Fred Hearty, The Pennsylvania State Univ. (United States); Michael McElwain, NASA Goddard Space Flight Ctr. (United States); Lawrence Ramsey, Suvrath Mahadevan, The Pennsylvania State Univ. (United States)

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Optical instrumentation for CubeSat based UV space payloads

(Canceled)

Paper 10690-52

Time: 2:00 PM - 2:20 PM

Author(s):

