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International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission

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Abstract Review Panel

CIE 2023 Abstract Review Panel		
Name	Country	Division
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Li-Chen Ou	TW	1
Kaida Xiao	GB	1
Peter Hanselear	BE	1
Yoko Mizokami	JP	1
Tony Bergen	AU	2
Hiroshi Shitomi	JP	2
Armin Sperling	DE	2
Dong-Hoon Lee	KR	2
Tobias Schneider	DE	2
Gaël Obein	FR	2
Grega Bijzak	SI	2
Peter Thorns	GB	3
Adries de Vries	NL	3
Vernoica Garcia-Hansen	AU	3
Martine Knoop	DE	3
Nozomu Yoshizawa	JP	3
Jennifer Veitch	CA	3
Claudia Amorim	BR	3
Laura Bellia	IT	3
Gilles Vissenberg	NL	3
Jan Wienold	CH	3
Anna Pellegrino	IT	3
Yuki Oe	JP	3
Yuki Akizuki	JP	3



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Dionyz Gasparovsly	SK	4
Steve Fotios	GB	4
Annika Jagerbrand	SE	4
Andrej Orgulan	SI	4
Rajaram Bhagavathula	IN	4
Tomas Novak	CZ	4
Luke Price	GB	6
Eric Liggins	GB	6
Vineetha Kalavally	MY	6
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Katja Malovrh Rebec	SI	6
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International Commission on Illumination
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SLOVENSKO DRUŠTVO ZA RIZSVETLJAVO / SDR
LIGHTING ENGINEERING SOCIETY OF SLOVENIA

PROCEEDINGS

of the
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THE PRESIDENTS OF THE CIE

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1927	C.C. Paterson	United Kingdom
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2007	F. Hengstberger	South Africa
2011	A.R. Webb	United Kingdom
2015	Y. Ohno	USA
2019	P. Blattner	Switzerland

OBJECTIVES OF THE CIE

THE INTERNATIONAL COMMISSION ON ILLUMINATION

The International Commission on Illumination (CIE) is an organization devoted to international co-operation and exchange of information among its member countries on all matters relating to the art and science of lighting. Its membership consists of the National Committees in about 40 countries.

The objectives of the CIE are:

1. To provide an international forum for the discussion of all matters relating to the science, technology and art in the fields of light and lighting and for the interchange of information in these fields between countries.
2. To develop basic standards and procedures of metrology in the fields of light and lighting.
3. To provide guidance in the application of principles and procedures in the development of international and national standards in the fields of light and lighting.
4. To prepare and publish standards, reports and other publications concerned with all matters relating to the science, technology and art in the fields of light and lighting.
5. To maintain liaison and technical interaction with other international organizations concerned with matters related to the science, technology, standardization and art in the fields of light and lighting.

The work of the CIE is carried out by Technical Committees, organized in six Divisions. This work covers subjects ranging from fundamental matters to all types of lighting applications. The standards and technical reports developed by these international Divisions of the CIE are accepted throughout the world.

A plenary session is held every four years at which the work of the Divisions and Technical Committees is reported and reviewed, and plans are made for the future. The CIE is recognized as the authority on all aspects of light and lighting. As such it occupies an important position among international organizations.

LA COMMISSION INTERNATIONALE DE L'ECLAIRAGE

La Commission Internationale de l'Éclairage (CIE) est une organisation qui se donne pour but la coopération internationale et l'échange d'informations entre les Pays membres sur toutes les questions relatives à l'art et à la science de l'éclairage. Elle est composée de Comités Nationaux représentant environ 40 pays.

Les objectifs de la CIE sont :

1. De constituer un centre d'étude international pour toute matière relevant de la science, de la technologie et de l'art de la lumière et de l'éclairage et pour l'échange entre pays d'informations dans ces domaines.
2. D'élaborer des normes et des méthodes de base pour la métrologie dans les domaines de la lumière et de l'éclairage.
3. De donner des directives pour l'application des principes et des méthodes d'élaboration de normes internationales et nationales dans les domaines de la lumière et de l'éclairage.
4. De préparer et publier des normes, rapports et autres textes, concernant toutes matières relatives à la science, la technologie et l'art dans les domaines de la lumière et de l'éclairage.
5. De maintenir une liaison et une collaboration technique avec les autres organisations internationales concernées par des sujets relatifs à la science, la technologie, la normalisation et l'art dans les domaines de la lumière et de l'éclairage.

Les travaux de la CIE sont effectués par Comités Techniques, organisés en six Divisions. Les sujets d'études s'étendent des questions fondamentales, à tous les types d'applications de l'éclairage. Les normes et les rapports techniques élaborés par ces Divisions Internationales de la CIE sont reconnus dans le monde entier.

Tous les quatre ans, une Session plénière passe en revue le travail des Divisions et des Comités Techniques, en fait rapport et établit les projets de travaux pour l'avenir. La CIE est reconnue comme la plus haute autorité en ce qui concerne tous les aspects de la lumière et de l'éclairage. Elle occupe comme telle une position importante parmi les organisations internationales.

DIE INTERNATIONALE BELEUCHTUNGSKOMMISSION

Die Internationale Beleuchtungskommission (CIE) ist eine Organisation, die sich der internationalen Zusammenarbeit und dem Austausch von Informationen zwischen ihren Mitgliedsländern bezüglich der Kunst und Wissenschaft der Lichttechnik widmet. Die Mitgliedschaft besteht aus den Nationalen Komitees in rund 40 Ländern.

Die Ziele der CIE sind:

1. Ein internationales Forum für Diskussionen aller Fragen auf dem Gebiet der Wissenschaft, Technik und Kunst der Lichttechnik und für den Informationsaustausch auf diesen Gebieten zwischen den einzelnen Ländern zu sein.
2. Grundnormen und Verfahren der Messtechnik auf dem Gebiet der Lichttechnik zu entwickeln.
3. Richtlinien für die Anwendung von Prinzipien und Vorgängen in der Entwicklung internationaler und nationaler Normen auf dem Gebiet der Lichttechnik zu erstellen.
4. Normen, Berichte und andere Publikationen zu erstellen und zu veröffentlichen, die alle Fragen auf dem Gebiet der Wissenschaft, Technik und Kunst der Lichttechnik betreffen.
5. Liaison und technische Zusammenarbeit mit anderen internationalen Organisationen zu unterhalten, die mit Fragen der Wissenschaft, Technik, Normung und Kunst auf dem Gebiet der Lichttechnik zu tun haben.

Die Arbeit der CIE wird durch Technische Komitees geleistet, die in sechs Divisionen organisiert sind. Diese Arbeit betrifft Gebiete mit grundlegendem Inhalt bis zu allen Arten der Lichtenwendung. Die Normen und Technischen Berichte, die von diesen international zusammengesetzten Divisionen ausgearbeitet werden, sind auf der ganzen Welt anerkannt. Alle vier Jahre findet eine Session statt, in der die Arbeiten der Divisionen berichtet und überprüft werden, sowie neue Pläne für die Zukunft ausgearbeitet werden. Die CIE wird als höchste Autorität für alle Aspekte des Lichtes und der Beleuchtung angesehen. Auf diese Weise unterhält sie eine bedeutende Stellung unter den internationalen Organisationen.

CIE-SLOVENIA ORGANIZING COMMITTEE

Grega Bizjak (General Chair)

Marta Klanjsek Gunde (Chair LOC)

Matej Kobav (Secretary LOC)

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Division 6	Photobiology and Photochemistry	Director:	Luc Schlangen
Division 8	Image Technology	Director:	Po-Chieh Hung

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Office Administrator:	Romana Floth (till 09/2021) Lavinia Lutai

DIVISIONS

Division 1 **Vision and Colour** **Vision et Couleur** **Sehen und Farbe**

Terms of Reference:

To study visual responses to light and to establish standards of response functions, models and procedures of specification relevant to photometry, colorimetry, colour rendering, visual performance and visual assessment of light and lighting.

Domaine d'activité:

Etudier les réponses visuelles à la lumière et établir des normes pour les fonctions-réponses, des modèles et des procédures de spécification, applicables à la photométrie, la colorimétrie, le rendu des couleurs, la performance visuelle et le jugement visuel de la lumière et de l'éclairage.

Arbeitsbereich:

Untersuchung von Sehfunktionen als 'Antwort' auf Lichtreize und Erstellung von Standard-Sehfunktionen, -Sehmodellen und -Spezifikationsverfahren, soweit diese für die Photometrie, Farbmessung, Farbwiedergabe, visuelle Leistung und für die Bewertung von Licht und Beleuchtung relevant sind.

Director:	Yougshin Kwak
Associate Director - Vision:	Yoko Mizokami
Associate Director - Colour:	Kaida Xiao
Secretary:	Li-Chen Ou
Editor:	Peter Hanselaer

Division 2
Physical Measurement of Light and Radiation
Mesures physiques de la lumière et des radiations
Physikalische Messungen von Licht und Strahlung

Terms of Reference:

1. To study standard procedures for the evaluation of ultraviolet, visible and infrared radiation, global radiation, and optical properties of materials and luminaires.
2. To study optical properties and performance of physical detectors and other devices required for their evaluation.

Domaine d'activité:

1. Etudier les procédures normalisées pour l'évaluation des radiations ultraviolettes, visibles et infrarouges, de la radiation globale et des propriétés optiques des matériaux et des luminaires.
2. Etudier les propriétés optiques et les performances des détecteurs physiques et autres dispositifs utilisés pour leur évaluation.

Arbeitsbereich:

1. Untersuchung von Standardverfahren zur Messung und Bewertung ultravioletter, sichtbarer und infraroter Strahlung, der Globalstrahlung und der optischen Eigenschaften von Leuchten und Baustoffen.
2. Untersuchung der optischen Eigenschaften und der Leistung physikalischer Detektoren und anderer Einrichtungen, soweit dies für ihre Bewertung notwendig ist.

Director:	Tony Bergen
Associate Director:	Gaël Obein
Associate Director:	Hiroshi Shitomi
Associate Director:	Joanne C. Zwinkels
Associate Director:	Armin Sperling
Secretary:	Dong-Hoon Lee
Editor:	Thiago Menegotto

Division 3
Interior Environment and Lighting Design
Environnement intérieur et étude de l'éclairage
Innenraum und Beleuchtungsentwurf

Terms of Reference:

1. To study and evaluate visual factors which influence the satisfaction of the occupants of a building with their environment, and their interaction with thermal and acoustical aspects, and to provide guidance on relevant design criteria for both natural and man-made lighting.
2. To study design techniques, including relevant calculations, for the interior lighting of buildings, incorporating the findings and those of other CIE Divisions into lighting guides for interiors in general, for particular types of interiors and for specific problems in interior lighting practice.

Domaine d'activité:

1. Etudier et évaluer les facteurs visuels qui agissent sur la satisfaction des occupants d'un bâtiment par rapport à leur environnement et leur interaction avec les aspects acoustiques et thermiques, et fournir un guide sur les critères d'étude correspondant à la fois à l'éclairage naturel et à l'éclairage conçu par l'homme.
2. Procéder à l'examen des techniques d'étude, y compris les calculs correspondant pour l'éclairage intérieur des bâtiments, en incorporant les résultats des travaux et de ceux d'autres Divisions de la CIE dans des guides pour l'éclairage intérieur en général, pour des types particuliers d'intérieurs et également pour traiter des problèmes spécifiques de la pratique de l'éclairage intérieur.

Arbeitsbereich:

1. Untersuchung und Bewertung visueller Einflussfaktoren auf die Akzeptanz eines Raumes durch die Benutzer des Gebäudes sowie diesbezüglicher Wechselwirkungen visueller, thermischer und akustischer Bedingungen, und Anleitung zu relevanten Entwurfskriterien für natürliche und künstliche Beleuchtung.
2. Untersuchung von Entwurfsverfahren einschliesslich notwendiger Berechnungen für die Innenbeleuchtung von Gebäuden, Einbau dieser Ergebnisse (sowie der von anderen CIE Divisionen) in Beleuchtungsrichtlinien für Innenräume, Spezialräume und für spezifische Probleme der Innenbeleuchtung.

Director:	Peter Thorns
Associate Director - Day Lighting:	Martine Knoop
Associate Director - Artificial Lighting:	Nozomu Yoshizawa
Secretary:	Adrie de Vries
Editor:	Veronica Garcia-Hansen

Division 4
Transportation and Exterior Applications
Transport et applications extérieures
Transport- und Außenanwendungen

Terms of Reference:

To study and prepare guides for the design of exterior lighting and light signalling.

Domaine d'activité:

Étudier et préparer des guides pour la conception de l'éclairage extérieur et de signalisation lumineuse.

Arbeitsbereich:

Untersuchung und Erstellung von Leitfäden für den Entwurf von Außenbeleuchtungs- und Lichtsignalanlagen.

Director:	Dionyz Gasparovsky
Associate Director:	Steve Fotios
Associate Director:	Maurice Donners
Associate Director:	Sermin Onaygil
Secretary:	Steve Lau
Editor:	Nigel Parry

Division 6
Photobiology and Photochemistry
Photobiologie et photochimie
Photobiologie und Photochemie

Terms of Reference:

To study and evaluate the effects of optical radiation on biological and photochemical systems (exclusive of vision).

Domaine d'activité:

Etudier et évaluer les effets de radiations optiques sur les systèmes biologiques et photochimiques (à l'exclusion de la vision).

Arbeitsbereich:

Untersuchung und Bewertung der Wirkungen optischer Strahlung auf photobiologische und photochemische Systeme. Hierbei ist die visuelle Wahrnehmung ausgenommen.

Director:	Luc Schlangen
Associate Director:	David Sliney
Associate Director:	Shu Takeshita
Secretary:	Luke Price
Editor:	Eric Liggins

Division 8
Image Technology
Technologie des images
Bildverarbeitung

Terms of Reference:

To study procedures and prepare guides and standards for the optical, visual and metrological aspects of the communication, processing, and reproduction of images, using all types of analogue and digital imaging devices, storage media, and imaging media.

Domaine d'activité:

Étudier les procédures et préparer des guides et des normes sur les aspects optiques, visuels et métrologiques de la communication, du traitement et de la reproduction des images, en utilisant tous les types d'appareils d'imagerie analogiques et numériques, les supports de stockage et les supports d'imagerie.

Arbeitsbereich:

Untersuchung von Verfahren und Ausarbeitung von Leitfäden und Normen für die optischen, visuellen und messtechnischen Aspekte der Kommunikation, Verarbeitung und Reproduktion von Bildern unter Verwendung aller Arten von analogen und digitalen Abbildungsgeräten, Speichermedien und Bildträgern.

Director:
Secretary:
Editor:

Po-Chieh Hung
Christine Fernandez-Maloigne
Danny C Rich (till 07/2022)
Ellen Carter

CURRENT CIE PUBLICATIONS

International Standards

CIE S 004/E:2001 Colours of Light Signals
ISO 16508:1999(E)/CIE S 006.1/E:1998 Road Traffic Lights - Photometric Properties of 200 mm Roundel Signals
ISO 16508:1999(F)/CIE S 006.1/F:1998 Feux de circulation - Caractéristiques photométriques de feux de signalisation avec un diamètre de 200 mm
ISO/CIE 17166:2019(E) Erythema Reference Action Spectrum and Standard Erythema Dose
ISO/CIE 17166:2019(F) Spectre d'action érythémale de référence et dose érythémale normalisée
CIE S 007/D:1998 Erythemale Referenzwirkungsfunktion und standardisierte Erythemdosis
ISO 8995-1:2002(E)/CIE S 008/E:2001 Lighting of Work Places – Part 1: Indoor
CEI/IEC 62471:2006/CIE S 009:2002 Sécurité photobiologique des lampes et des appareils utilisant des lampes / Photobiological Safety of Lamps and Lamp Systems (bilingual edition)
CIE S 009/D:2002 Photobiologische Sicherheit von Lampen und Lampensystemen
ISO 23539:2005(E)/CIE S 010/E:2004 Photometry - The CIE System of Physical Photometry
ISO 23539:2005(F)/CIE S 010/F:2007 Photométrie – Le système CIE de photométrie physique
ISO 15469:2004(E)/CIE S 011/E:2003 Spatial Distribution of Daylight - CIE Standard General Sky
ISO 15469:2004(F)/CIE S 011/E:2007 Répartition spatiale de la lumière du jour – Ciel général normalisé CIE
ISO 23603:2005(E)/CIE S 012/E:2005 Standard Method of Assessing the Spectral Quality of Daylight Simulators for Visual Appraisal and Measurement of Colour
ISO 23603:2005(F)/CIE S 012/F:2007 Méthode normalisée d'évaluation de la qualité spectrale des simulateurs de lumière du jour pour le jugement visuel et la mesure des couleurs
CIE S 013/E:2003 International Standard Solar Global UV Index
CIE S 015/E:2005 Lighting of Outdoor Work Places
CIE S 017/E:2020 ILV: International Lighting Vocabulary, 2nd Edition
ISO 30061:2007(E)/CIE S 020/E:2007 Emergency Lighting
CIE S 021/E:2011 Vehicle Headlighting Systems Photometry Performance – Method of Assessment
ISO/CIE 19476:2014(E) Characterization of the Performance of Illuminance Meters and Luminance Meters
ISO/CIE 19476:2014(F) Caractérisation des performances des luxmètres et des luminancemètres
CIE S 025/E:2015 Test Method for LED Lamps, LED Luminaires and LED Modules
ISO/CIE 28077:2016 Photocarcinogenesis action spectrum (non-melanoma skin cancers), 2016

CIE S 026/E:2018 CIE System for Metrology of Optical Radiation for ipRGC-Influenced Responses to Light
CIE S 026:2018(CN)
内在光敏视网膜神经节细胞受光响应的光辐射计量系统
ISO/CIE 8995-3:2018(E) Lighting of Work Places – Part 3: Lighting Requirements for Safety and Security of Outdoor Work Places
ISO/CIE 20086:2019(E) Light and lighting — Energy performance of lighting in buildings
ISO/CIE TS 20012:2019(E) Light and lighting — Maintenance factor determination — Way of working
CIE S 025-SP1/E:2019 Test Method for OLED Luminaires and OLED Light Sources
CIE S 017/E:2020 International Lighting Vocabulary, 2nd Edition
ISO/CIE 23539:2023(E) Photometry — The CIE system of physical photometry

Colorimetry Series

ISO/CIE 11664-1:2019(E) Colorimetry – Part 1: Standard colorimetric observers
ISO/CIE 11664-1:2019(F) Colorimétrie – Partie 1: Observateurs CIE de référence pour la colorimétrie
ISO 11664-2:2007(E)/CIE S 014-2/E:2006 Colorimetry – Part 2: Standard Illuminants for Colorimetry
ISO 11664-2:2007(F)/CIE S 014-2/F:2006 Colorimétrie – Partie 2: Illuminants CIE normalisés
ISO/CIE 11664-3:2019(E) Colorimetry - Part 3: CIE tristimulus values
ISO/CIE 11664-3:2019(F) Colorimétrie – Partie 3: Composantes trichromatiques CIE
ISO/CIE 11664-4:2019(E) Colorimetry – Part 4: CIE 1976 L*a*b* colour space
ISO/CIE 11664-4:2019(F) Colorimétrie – Partie 4: Espace chromatique L*a*b* CIE 1976
ISO/CIE 11664-5:2016 Colorimetry - Part 5: CIE 1976 L*u*v* colour space and u', v' uniform chromaticity scale diagram
ISO/CIE 11664-6:2014(E) Colorimetry – Part 6: CIEDE2000 colour-difference formula
ISO/CIE 11664-6:2014(F) Colorimétrie – Partie 6: Formule d'écart de couleur CIEDE2000
ISO/CIE 11664-2:2022(E) Colorimetry – Part 2: CIE standard illuminants
ISO/CIE 11664-2:2022(F) Colorimétrie —Partie 2: Illuminants CIE normalisés
ISO/CIE 11664-6:2022(E) Colorimetry – Part 6: CIEDE2000 colour-difference formula
ISO/CIE 11664-6:2022(F) Colorimétrie —Partie 6: Formule de la différence de couleur

Technical Reports

1 Guidelines for Minimizing Urban Sky Glow Near Astronomical Observatories (Joint Publication IAU/CIE), 1980.
13.3 Method of Measuring and Specifying Colour Rendering of Light Sources, 1995.

15 Colorimetry, 4th Edition, 2018.
16 Daylight, 1970.
18 The Basis of Physical Photometry, 3rd ed., 2019.

- 19.21 An Analytic Model for Describing the Influence of Lighting Parameters upon Visual Performance, 2nd Ed., Vol. 1: Technical Foundations, 1981.
- 19.22 An Analytic Model for Describing the Influence of Lighting Parameters upon Visual Performance, 2nd Ed., Vol. 2: Summary and Application Guidelines, 1981.
- 31 Glare and Uniformity in Road Lighting Installations, 1976.
- 32 Lighting in Situations Requiring Special Treatment (in Road Lighting), 1977.
- 33 Depreciation of Installation and their Maintenance (in Road Lighting), 1977.
- 34 Road Lighting Lantern and Installation Data: Photometrics, Classification and Performance, 1977.
- 38 Radiometric and Photometric Characteristics of Materials and Their Measurement, 1977.
- 39.2 Recommendations for Surface Colours for visual Signalling, 1983.
- 40 Calculations for Interior Lighting: Basic Method, 1978.
- 41 Light as a True Visual Quantity: Principles of Measurement, 1978.
- 42 Lighting for Tennis, 1978.
- 43 Photometry of Floodlights, 1979.
- 44 Absolute Methods for Reflection Measurements, 1979.
- 45 Lighting for Ice Sports, 1979.
- 46 A Review of Publications on Properties and Reflection Values of Material Reflection Standards, 1979.
- 47 Road Lighting for Wet Conditions, 1979.
- 51.2 A Method for Assessing the Quality of Daylight Simulators for Colorimetry, 1999.
- 52 Calculations for Interior Lighting: Applied Method, 1982.
- 53 Methods of Characterizing the Performance of Radiometers and Photometers, 1982.
- 54.2 Retroreflection: Definition and Measurement, 2001.
- 55 Discomfort Glare in the Interior Working Environment, 1983.
- 57 Lighting for Football, 1983.
- 58 Lighting for Sports Halls, 1983.
- 59 Polarization: Definitions and Nomenclature, Instrument Polarization, 1984.
- 61 Tunnel Entrance Lighting: A Survey of Fundamentals for Determining the Luminance in the Threshold Zone, 1984.
- 62 Lighting for Swimming Pools, 1984.
- 63 The Spectroradiometric Measurement of Light Sources, 1984.
- 66 Road Surfaces and Lighting (Joint Technical Report CIE/PIARC), 1984.
- 67 Guide for the Photometric Specification and Measurement of Sports Lighting Installations, 1986.
- 70 The Measurement of Absolute Luminous Intensity Distributions, 1987.
- 72 Guide to the Properties and Uses of Retroreflectors at Night, 1987.
- 75 Spectral Luminous Efficiency Functions Based upon Brightness Matching for Monochromatic Point Sources, 2° and 10° Fields, 1988.
- 76 Intercomparison on Measurement of (Total) Spectral Radiance Factor of Luminescent Specimens, 1988.
- 77 Electric Light Sources: State of the Art - 1987, 1988.
- 78 Brightness-Luminance Relations: Classified Bibliography, 1988.
- 80 Special Metamerism Index: Change in Observer, 1989.
- 81 Mesopic Photometry: History, Special Problems and Practical Solutions, 1989.
- 82 CIE History 1913 - 1988, 1990.
- 83 Guide for the Lighting of Sports Events for Colour Television and Film Systems, 3rd Edition, 2019.
- 84 Measurement of Luminous Flux, 1989.
- 86 CIE 1988 2° Spectral Luminous Efficiency Function for Photopic Vision, 1990.
- 87 Colorimetry of Self-Luminous Displays - A Bibliography, 1990.
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103/5 The Economics of Interior Lighting Maintenance
103/6 Clarification of Maintained Illuminance and Associated Terms.
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106/3 Photoconjunctivitis (Reprint)
106/4 A Reference Action Spectrum for Ultraviolet Induced Erythema in Human Skin (Reprint)
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106/6 Malignant Melanoma and Fluorescent Lighting (Reprint)
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- 109 A Method of Predicting Corresponding Colours Under Different Chromatic and Illuminance Adaptation, 1994.
- 110 Spatial Distribution of Daylight - Luminance Distributions of Various Reference Skies, 1994.
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- 163 The Effects of Fluorescence in the Characterization of Imaging Media, 2004.
- 164 Hollow Light Guide Technology and Applications, 2005.
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- 168 Criteria for the Evaluation of Extended-Gamut Colour Encodings, 2005.
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- 004 The Use of Terms and Units in Photometry – Implementation of the CIE System for Mesopic Photometry, 2016.
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- 012 Guidance on the Measurement of Temporal Light Modulation of Light Sources and Lighting Systems, 2021
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- 014 Example Luminance Measurement Setup for UGR, 2023
- 015 Second International Workshop on Circadian and Neurophysiological Photoreception

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CD-ROMs

D001	Disc version of CIE Photometric and Colorimetric Data (Tables of Publ. 18.2 and 86), 2006.	D007	A computer program implementing the "Method of Predicting Corresponding Colours under Different Chromatic and Illuminance Adaptation" (described in CIE 109-1994), 1994.
D002	Disc version of CIE Colorimetric and Colour Rendering Data (Tables of Publ. 13.3 and 15), 2004.	D008	Computer program to calculate CRIs (according to CIE 13.3-1995), 1995.

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x005	Proceedings of the CIE Seminar '92 on "Computer Programs for Light and Lighting", 1992.	x024	Proceedings of the CIE/ARUP Symposium on "Visual Environment", 2002.
x006	Japan CIE Session at PRAKASH 91, 1991.	x025	Proceedings of the CIE Symposium 2002 on "Temporal and Spatial Aspects of Light and Colour Perception and Measurement", 2003.
x007	Proceedings of the CIE Symposium '93 on "Advanced Colorimetry", 1993.	x026	Proceedings of the CIE Symposium 2004 on "LED Sources: Physical Measurement and Visual and Photobiological Assessment", 2005.
x008	Proceedings of a Symposium of CIE TC 4-21 on "Urban Sky Glow - A Worry for Astronomy", 1994.	x027	Proceedings of the CIE Symposium 2004 on "Light and Health: Non-Visual Effects", 2004
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x010	Proceedings of the CIE Expert Symposium '96 on "Colour Standards for Image Technology", 1996.	x029	Proceedings of the 2 nd CIE Expert Symposium on "Measurement Uncertainty", 2006.
x011	Special Volume, 23 rd Session, New Delhi '95, Late Papers, 1996.	x030	Proceedings of the ISCC/CIE Expert Symposium 2006 "75 Years of the CIE Standard Colorimetric Observer", 2006.
x012	Proceedings of the NPL/CIE-UK Conference "Visual Scales, Photometric and Colorimetric Aspects", 1997.	x031	Proceedings of the 2 nd CIE Expert Symposium on "Lighting and Health", 2006.
x013	Proceedings of the CIE LED Symposium '97 on "Standard Methods for Specifying and Measuring LED Characteristics", 1998.	x032	Proceedings of the CIE Expert Symposium on "Visual Appearance", 2007.
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x015	Proceedings of the First CIE Symposium on "Lighting Quality", 1998.	x034	Selected Papers of the Light and Lighting Conference with Special Emphasis on LEDs and Solid State Lighting, 2010.
x016	Proceedings of the CIE/ICNIRP Conference on "Measurements of Optical Radiation Hazards", 1998.	x035	Proceedings of the CIE Conference "Lighting Quality and Energy Efficiency", 2010.
x017	Special Volume, 24 th Session, Warsaw '99, Late Papers, 2000.	x036	Proceedings of the CIE Expert Symposium on "Spectral and Imaging Methods for Photometry" and Radiometry, 2010.
x018	Proceedings of the CIE Symposium '99 "75 Years of CIE Photometry", 1999.	x037	Proceedings of the CIE Conference "Lighting Quality and Energy Efficiency", 2012.
x019	Proceedings of three CIE Workshops on "Criteria for Road Lighting", 2001.	x038	Proceedings of the CIE Centenary Conference "Towards a New Century of Light", 2013.
x020	Proceedings of the CIE Symposium 2001 "Uncertainty Evaluation, Methods for Analysis of Uncertainties in Optical Radiation Measurement", 2001.	x039	Proceedings of the CIE Conference "Lighting Quality and Energy Efficiency", 2014.
x021	Proceedings of the CIE Expert Symposium 2000 "Extended Range Colour Spaces", 2001.	x040	Proceedings of CIE Expert Symposium on Measurement Uncertainties in Photometry and Radiometry for Industry, 2014.
x022	Proceedings of the 2 nd CIE Expert Symposium on "LED Measurement - Standard Methods for Specifying and Measuring LED and LED Cluster Characteristics", 2001.		
x023	Proceedings of two CIE Workshops on "Photometric Measurement Systems for Road Lighting Installations", 2002.		

- x041 CIE Expert Symposium on the CIE S 025 LED Lamps, LED Luminaires and LED Modules Test Standard, 2016.
- x042 Proceedings of CIE 2016 "Lighting Quality and Energy Efficiency", 2016.
- x043 Proceedings of the 4th CIE Expert Symposium on Colour and Visual Appearance, Prague, Czech Republic, 2016.
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- x046 Proceedings of the 29th CIE Session, 2019.
- X047 Collection of papers accepted for the 5th CIE Symposium on Colour and Visual Appearance, April 21–22, 2020, Hong Kong, CN.
- x048 Proceedings of the Conference CIE 2021 (online), 2021.
- X049 Proceedings of the CIE symposium on the Advances in Measurement of Temporal Light Modulation, 2022.

CIE Publications on DVD

A DVD with all current CIE Technical Reports and Standards is available from IHS:
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PROGRAMME

**Monday, September 18
Morning**

Linhart Hall				
09:00	- 09:10	<p align="center">OPENING SESSION Grega Bizjak, SI (Local Organizing Committee Chair) Peter Blattner, CH (CIE President)</p>		
		<p align="center">Keynote Presentation Chair: Peter Blattner, CH</p>		
		<p align="center">Invited Presentation Chair: Jennifer Veitch, CA</p>		
09:10	- 10:10	<p align="center">IP01 THE FUTURE OF INDOOR LIGHTING STANDARDS (AND HOW TO GET THERE) Peter Boyce, GB & Kit Cuttle, NZ</p>		
10:10	- 10:25	<p align="center">GOLD PIN AWARD CEREMONY</p>		
10:25	- 10:50	<p align="center">COFFEE BREAK</p>		
		Linhart Hall	Kosovel Hall	M1 Hall
		Oral Presentations		
10:50	- 12:10	<p align="center">PA1-1 D2 - Spectroradiometry and photometry Chair: Dong-Hoon Lee, KR</p>	<p align="center">PA1-2 D3 - Office lighting Chair: Adrie de Vries, NL</p>	<p align="center">PA1-3 D4/D3 - Road safety Chair: Ron Gibbons, US</p>
10:50	- 11:05	<p align="center">OP40 Constantinos Bouroussis, CH RECONSTRUCTION OF CAMERA SPECTRAL RESPONSIVITY USING MULTIPLE NARROW-BAND LED RADIANCE SOURCES</p>	<p align="center">OP57 Johanna Enger, SE EMOTIONS ASSOCIATED WITH AN OFFICE ILLUMINATION AND A PROCESS TO IMPROVE THEM</p>	<p align="center">OP6 Nima Moadab, GB IMPROVING THE DETECTION OF PEDESTRIANS AFTER DARK</p>
11:05	- 11:20	<p align="center">OP61 Udo Krüger, DE SENSITIVITY EVALUATION OF MEASUREMENT UNCERTAINTY CONTRIBUTIONS OF SPECTRAL DATA FOR CALCULATED INTEGRAL QUANTITIES</p>	<p align="center">OP11 Kynthia Chamilothoni, NL EFFECTS OF DYNAMIC LIGHT PATTERNS WITH NATURAL AND NON-NATURAL TEMPORAL COMPOSITION ON REPORTED STRESS RECOVERY, FASCINATION, AND ASSOCIATION WITH NATURE</p>	<p align="center">OP66 Arjen Mentens, BE IMPACT OF COLOUR TEMPERATURE AND ILLUMINATION LEVEL ON SAFETY PERCEPTION FOR PARKING GARAGE LIGHTING</p>
11:20	- 11:35	<p align="center">OP77 Christian Schrader, DE SPECTRAL DEPENDENT NON-LINEARITY OF CHARGE ACCUMULATING PIXEL MATRIX SENSORS</p>	<p align="center">OP74 Arjen Raue, NL BIODYNAMIC LIGHTING IN PRACTICE: PILOT STUDY IN A GOVERNMENT OFFICE</p>	<p align="center">OP36 Jim Uttley, GB CYCLIST FATALITIES INCREASE ON UNLIT ROADS</p>
11:35	- 11:50	<p align="center">OP35 Hiroshi Shitomi, JP METROLOGICAL IMPACT OF INTRODUCING CONE FUNDAMENTAL-BASED PHOTOMETRY AS THE BASIS TO DERIVE PHOTOMETRIC UNITS</p>	<p align="center">OP81 Jennifer Veitch, CA OFFICE LIGHTING FOR LIGHT-SENSITIVE INDIVIDUALS: A PILOT TEST</p>	<p align="center">OP5 Steve Fotios, GB CYCLISTS ARE INCORRECTLY REPRESENTED IN LIGHTING DESIGN STANDARDS</p>
11:50	- 12:10	Discussion	Discussion	Discussion
12:10	- 13:20	<p align="center">LUNCH BREAK</p>		

**Monday, September 18
Afternoon**

	Linhart Hall	Kosovel Hall	M1 Hall
	Workshop/Seminar	Oral Presentations	Workshop/Seminar
13:20 - 14:55	WS1 (D3) Convenor: Peter Thorns, GB	PA2-1 D4/D1 - Road lighting measurement Chair: Diony Gasparovsky, SK	WS2 (D2) Convenor: Tony Bergen, AU
13:20 - 13:35	INTERIOR LIGHTING DESIGN - METRICS AND METHODS	OP8 Florian Greffier, FR Qd VS Q0 FOR SCALING OF STANDARD R-TABLES IN ROAD LIGHTING DESIGN: THE QUESTION IS WORTH ASKING	CAN CONE FUNDAMENTALS BE USED IN EVERYDAY PHOTOMETRY?
13:35 - 13:50		OP30 Laure Lebouc, FR EXPLORATORY STUDY TO DEFINE NEW OBSERVATION GEOMETRIES FOR ROAD LIGHTING DESIGN	
13:50 - 14:05		OP69 Maria Nilsson Tengelin, SE A NOVEL METHOD FOR FIELD MEASUREMENTS OF LIGHT DISTRIBUTION OF MODERN VEHICLE HEADLAMPS	
14:05 - 14:20		OP68 Valérie Muzet, FR ON SITE PHOTOMETRIC CHARACTERIZATION OF WET PAVEMENTS	
14:20 - 14:35		OP76 Katrin Schier, DE TOWARDS A GENERALIZED MODEL FOR THE DETECTION OF NON-UNIFORMITIES IN LUMINANCE DISTRIBUTIONS	
14:35 - 14:55		Discussion	
14:55 - 15:20		COFFEE BREAK	

	Linhart Hall	Kosovel Hall	M1 Hall
	Presented Posters (PS)		
15:20 - 16:05	PS1 Presented Posters (D1/D3/D6/D8) Chair: Katja Malovrh Rebec, SI	PS2 Presented Posters (D3/D1/D6) Chair: Claudia Amorim, BR	PS3 Presented Posters (D2/D4) Chair: Armin Sperling, DE
15:20 - 15:25	PP9 Ruili He, GB VISUAL COLOUR-DIFFERENCE ASSESSMENT OF 3D PRINTED SAMPLES	PP2 Michèle Atié, FR METHOD FOR EVALUATING FIDELITY OF RESTITUTION OF SUBJECTIVE IMPRESSIONS IN IMMERSIVE VIRTUAL REALITY IN DAYLIT INTERIOR SCENES	PP7 Dionyz Gasparovsky, SK LIGHTING ENVIRONMENT IN URBAN PARKLANDS AND GARDENS: CASE MODELS FOR BRATISLAVA
15:25 - 15:30	PP11 Luke Hellwig, US IMPROVEMENTS TO CIECAM16 AND FUTURE DIRECTIONS	PP4 Kynthia Chamilothoni, NL THE IMPACT OF COLOUR AND SIMULATION DETAIL ON SUBJECTIVE IMPRESSIONS OF RENDERED SCENES IN IMMERSIVE VIRTUAL REALITY	PP20 Enoch Saint-Jacques, FR INVESTIGATING THE EVOLUTION OF ROAD SURFACE DESCRIPTORS ACCORDING TO OBSERVATION ANGLES USING A DATABASE OF THE REFLECTION PROPERTIES OF URBAN MATERIALS
15:30 - 15:35	PP16 Stuart Mucklejohn, GB QUANTIFYING THE POTENTIAL IMPACT OF MAINTENANCE FACTORS ON LIGHTING UNIFORMITY IN HORTICULTURAL INSTALLATIONS	PP15 Marshal Maskarenj, BE MIXED EFFECT OF TIME OF DAY AND CORRELATED COLOUR TEMPERATURE ON DISCOMFORT GLARE	PP22 Christoph Schulze, DE CHARACTERISATION OF ROAD REFLECTION IN RELATION TO VEHICLE HEADLAMP ILLUMINATION
15:35 - 15:40	PP23 Zeng Xianxian, CN EVALUATION OF THE COLOUR HARMONY OF ARTIFICIAL LIGHT AT NIGHT IN URBAN COMMERCIAL DISTRICT UTILIZING HYPERSPECTRAL IMAGING	PP17 Yuki Oe, JP EVALUATION STRUCTURE ON PREFERENCE OF PAINTING'S APPEARANCE IN MUSEUM LIGHTING	PP28 Lanlan Wei, SI EXPLORE THE RELATIONSHIP BETWEEN AMBIENT LIGHT AND CYCLING FREQUENCY AND SPEED
15:40 - 15:45	PP3 Simon Belgers, NL DEGRADATION OF BIOLOGICAL POTENCY IN LED LIGHT SOURCES WITH LIFETIME	PP25 Valerio Lo Verso, IT TRAINING ON SUSTAINABLE DAYLIGHTING: THE NLITED PROJECT	PP5 Alejandro Ferrero, SP PRELIMINARY STUDY FOR TRACEABILITY ON SPECULAR GLOSS
15:45 - 15:50	PP6 Francesca Fragliasso, IT DOES LIGHT AFFECT FUNGAL GROWTH? EXPERIMENTAL ANALYSIS UNDER MONOCHROMATIC LED SOURCES	PP26 Bo Tang, CN THE INFLUENCE OF THE CONTENTS OF DYNAMIC WINDOW VIEW ON THE HEALING EFFECT OF PEOPLE IN ISOLATED, CONFINED AND EXTREME ENVIRONMENT	PP8 Lou Gevaux, FR METHOD FOR TRACEABILITY OF MULTISCALE BIDIRECTIONAL REFLECTANCE DISTRIBUTION FUNCTION MEASUREMENTS
15:50 - 15:55	PP18 Masayuki Osumi, JP SPARKLE AND GRAININESS INDEX MEASUREMENT OF METALLIC COATINGS WITH MATTING AGENT	PP29 Songbo Zhang, CN ENERGY SAVING WITHOUT COMPROMISING HUMAN COMFORT: A FIELD STUDY OF SMART LIGHTING IN OFFICE	PP10 János Hegedüs, HU LED LIFETIME TESTS FOR CIRCUIT SIMULATION MODELLING
15:55 - 16:00		PP13 Yandan Lin, CN THE EFFECT OF LIGHT INTERVENTION ON EMOTION BASED ON THE COMBINED IMPACT OF VISUAL PREFERENCE AND NON-VISUAL INFLUENCE	PP14 Ville Mantela, FI TEMPORAL LIGHT ARTEFACT METRICS OF COMMERCIAL LED LAMPS
16:00 - 16:05			PP19 Masoud Rastgou, FI VALIDATION OF A MICRO-REFLECTOMETER FOR ACCURATE CHARACTERIZATION OF THIN FILM COATINGS

	Second foyer
16:05 - 17:35	Poster session 1

	Lobby of Faculty of Electrical Engineering, University of Ljubljana
19:00 - 21:00	Student Networking Event (by invitation)

**Tuesday, September 19
Morning**

Linhart Hall			
Invited Presentation Chair: Peter Blattner, CH			
08:30 - 09:30	IP02 SHEDDING LIGHT ON FAIR DATA AND OPEN SCIENCE Simon Hodson, FR		
09:30 - 09:55	COFFEE BREAK		
09:55 - 10:00	Room configuration		
	Linhart Hall	Kosovel Hall	
	Oral Presentations		
10:00 - 11:20	PA3-1 D3 - Sustainability 1 and resiliency Chair: Peter Thorns, GB	PA3-2 D3/D6 - Integrative lighting 1 Chair: Kevin Houser, US	PA3-3 D1/D3 - Augmented and virtual reality Chair: Youngshin Kwak, KR
10:00 - 10:15	OP23 Yuki Akizuki, JP STUDY ON LIGHTING PLANNING FOR ACTIVE EVACUATION GUIDANCE DESIGN	OP3 Kai Broszio, DE LIGHT DIRECTION AT NIGHT INFLUENCES NON-VISUAL EFFECTIVENESS	OP63 Li-Chen Ou, TW CHARACTERISING HEAD-MOUNTED DISPLAYS BASED ON VISUAL ASSESSMENT
10:15 - 10:30	OP86 Hideki Yamaguchi, JP EVALUATION OF LIGHTING ENVIRONMENT IN A GYMNASIUM FOR VARIOUS ACTIVITIES DURING USE OF AN EVACUATION CENTER	OP53 Yingying Huang, CN THE EFFECT OF S-CONE ON LIGHT-INDUCED ALERTNESS BASED ON ACCURACY STUDY OF EEG EVALUATION METHOD	OP67 Hiroyuki Miyake, JP RELIABILITY OF SPACIOUSNESS AND BRIGHTNESS EVALUATION IN ROOMS WITH WINDOWS USING HEAD-MOUNTED DISPLAY VIRTUAL REALITY
10:30 - 10:45	OP25 Rengin Aslanoglu, PL A CROSS-COUNTRY AND SEASON ANALYSIS OF RESIDENTIAL LIGHTING	OP52 Steffen Hartmeyer, CH INSIGHTS INTO SPECTRALLY RESOLVED LIGHT-DOSIMETRY DATA	OP13 Xi Mou, US THE EFFECTS OF AMBIENT LIGHTING IN THE USAGE OF AUGMENTED REALITY
10:45 - 11:00	OP37 Johannes Weninger, AT POST-OCCUPANCY DERIVED USER PROFILES FOR IMPROVED ENERGETIC AND LIGHT DOSE RELATED BUILDING SIMULATION	OP16 Anna Pellegrino, IT INTEGRATIVE LIGHTING IN OFFICES: RESULTS FROM FIELD MEASUREMENTS AND ANNUAL DAYLIGHT SIMULATIONS	Discussion
11:00 - 11:20	Discussion	Discussion	

11:20 - 12:30	LUNCH BREAK	
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**Tuesday, September 19
Afternoon**

Linhart Hall			Kosovel Hall			M1 Hall			
Oral Presentations									
12:30 - 14:05	PA4-1 D3//D1/D6 - Integrative lighting 2 Chair: Manuel Spitschan, DE			PA4-2 D4 - Sustainability 2 Chair: Constantinos Bouroussis, CH			PA4-3 D1/D2 - Optical properties of materials Chair: Yoko Mizokami, JP		
12:30 - 12:45	OP4 Roel Daneels, BE A CONTINUOUS RATING EXPERIMENT TO TEST THE FEASIBILITY OF WORKING WITH HIGH-LUMINANCE MONITORS TO INCREASE LIGHT AT EYE LEVEL			OP22 Celine Villa, FR FOUR-MONTH FOLLOW-UP OF THE PERFORMANCE OF LUMINESCENT ROAD MARKINGS			OP31 Frédéric Leloup, BE SOFT METROLOGY OF TRANSMISSION HAZE: AN EXPLORATORY STUDY		
12:45 - 13:00	OP17 Luke Price, GB LIGHTING HYGIENE, MELANOPIC DAYLIGHT EFFICACY RATIOS AND ENERGY EFFICIENCY			OP34 Egidio De Benedetto, IT A FIRST STEP IN PERFORMANCE ASSESSMENT OF A GRAZING LIGHTING SYSTEM FOR MOTORWAYS: A PRACTICAL CASE STUDY CONSIDERING FOG AS THE MAIN INFLUENCE QUANTITY			OP24 Robin Aschan, FI UNIVERSAL BIDIRECTIONAL REFLECTANCE DISTRIBUTION FUNCTION DATA FORMAT FOR MACHINE-DRIVEN SCIENCE		
13:00 - 13:15	OP75 Hannah Rolf, DE EFFECTS OF LIGHT ON ATTENTION OF DAYTIME WORKERS: A LABORATORY STUDY			OP44 Leonard De Causmaecker, BE TOWARDS PUBLIC LED LIGHTING WITH MINIMAL IMPACT ON INSECT MOVEMENT			OP28 Guillaume Ged, FR EFFECT OF SURFACE CURVATURE ON SPECULAR GLOSS EVALUATIONS		

13:15 - 13:30	<p>OP10</p> <p>Qi Dai, CN</p> <p>THE CONTRIBUTION OF IPRGC-RELATED MELANOPIC ILLUMINANCE TO SPATIAL BRIGHTNESS IN INTERIOR SPACES</p>	<p>OP55</p> <p>Annika Jägerbrand, SE</p> <p>WHAT TO REPORT IN STUDIES OF ANTHROPOGENIC LIGHT AND LIGHT POLLUTION</p>	Discussion
	<p>OP42</p> <p>Caroline Karmann, DE</p> <p>VARIATION IN PHOTOPIC AND MELANOPIC LIGHTING IN SWISS OFFICES: A FIELD STUDY</p>	<p>OP70</p> <p>Tomas Novak, CZ</p> <p>BILLBOARD LIGHTING SYSTEMS MODELING FROM THE POINT OF VIEW OF ITS RADIATION INTO UPPER HEMISPHERE</p>	
13:30 - 13:45			
13:45 - 14:05	Discussion	Discussion	

14:05 - 14:30 **COFFEE BREAK**

	Linhart Hall	Kosovel Hall	M1 Hall
	Oral Presentations		Workshop/Seminar
14:30 - 16:05	<p>PA5-1</p> <p>D2/D1 - Temporal light modulation</p> <p>Chair: Valéry Ann Jacobs, BE</p>	<p>PA5-2</p> <p>D3/D2 - Daylight</p> <p>Chair: Veronica Garcia Hansen, AU</p>	<p>WS3 (Cross CIE)</p> <p>Convenor: Luoxi Hao, CN</p>
14:30 - 14:45	<p>OP12</p> <p>Christophe Martinsons, FR</p> <p>UNTANGLING LIGHT IN "NOISY" LUMINOUS ENVIRONMENTS</p>	<p>OP1</p> <p>Ignacio Acosta, SP</p> <p>CONTINUOUS OVERCAST DAYLIGHT AUTONOMY: A NEW SENSORLESS ALGORITHM FOR LIGHTING SMART CONTROLS</p>	LIGHTING EDUCATION: METHODS, APPROACHES AND EXPERIENCES
14:45 - 15:00	<p>OP21</p> <p>Anders Thorseth, DK</p> <p>TOWARDS A COMPREHENSIVE CALCULATION OF MEASUREMENT UNCERTAINTY FOR TEMPORAL LIGHT MODULATION</p>	<p>OP26</p> <p>Priji Balakrishnan, DE</p> <p>SKYSPECTRA: AN OPENSOURCE DATA PACKAGE OF WORLDWIDE SPECTRAL DAYLIGHT</p>	
15:00 - 15:15	<p>OP62</p> <p>Johannes Ledig, DE</p> <p>UTILIZING THE ROLLING SHUTTER OF ACTIVE PIXEL MATRIX SENSORS TO PERFORM QUALITATIVE MEASUREMENTS OF TEMPORAL LIGHT MODULATION</p>	<p>OP73</p> <p>Amanda Pinheiro, BR</p> <p>DAYLIGHT REQUIREMENTS: AN OVERVIEW OF DEFINITIONS, PROGRESS AND GAPS</p>	
15:15 - 15:30	<p>OP80</p> <p>Annika Stein, DE</p> <p>SYSTEMATIC ERRORS OF TEMPORAL LIGHT MODULATION METRICS RELATED TO SAMPLING DURATION</p>	<p>OP15</p> <p>Alfiya Orman, US</p> <p>IMPLEMENTATION OF A RECONSTRUCTED SPECTRAL SKY DEFINITION IN A LIGHT SIMULATION TOOL AND COMPARISON TO MEASUREMENTS</p>	
15:30 - 15:45	<p>OP60</p> <p>Xiangzhen Kong, NL</p> <p>DEPENDENCE OF TEMPORAL FREQUENCY AND CHROMATICITY ON THE VISIBILITY OF THE PHANTOM ARRAY EFFECT</p>	<p>OP59</p> <p>Dong Hyun Kim, CH</p> <p>PERFORMANCE INVESTIGATION OF CAMERAS USING HDR SENSORS FOR DAYLIGHT GLARE EVALUATIONS</p>	
15:45 - 16:05	Discussion	Discussion	

16:05 - 17:35 **Second foyer**

Poster session 2

20:00 - 00:00 **Grand Hotel Union**

Conference Dinner

**Wednesday, September 20
Morning**

Linhart Hall	
Invited Presentation Chair: Tony Bergen, AU	
08:30 - 09:30	IP03 SEEING AND FEELING CHANGES IN DAYLIGHT OVER TIME Anya Hurlbert, GB
09:30 - 09:55	COFFEE BREAK
09:55 - 10:00	Room configuration

	Linhart Hall	Kosovel Hall	M1 Hall
	Oral Presentations	Workshop/Seminar	Oral Presentations
10:00 - 11:20	PA6-1 D3/D4 - Energy efficiency Chair: Nozomu Yoshizawa, JP	WS4 (D3/D4) Convenors: Jennifer Veitch, CA & Steve Fotios, GB	PA6-2 D4/D6/D8/D1 - Metrology challenges and opportunities Chair: Po-Chieh Hung, US
10:00 - 10:15	OP2 Wenkai Bian, AU A MACHINE-LEARNING-AIDED APPROACH TO THE OPTIMIZATION OF LIGHTING CONTROL SYSTEMS FOR ENERGY SAVINGS AND VISUAL NEEDS	LOOKING AHEAD - LIGHTING FOR PREPAREDNESS	OP29 Paola Iacomussi, IT IS IT TIME FOR A NON-BIOLOGICAL REFERENCE OBSERVER?
10:15 - 10:30	OP45 Kiia Aurora Ainola, FI A MODEL FOR DETECTING DAYLIGHT PROVISION TO SAVE ENERGY AND TO COMPLY WITH THE EN 12464-1 STANDARD		OP39 Tony Bergen, AU THE NEED FOR STANDARDISATION IN THE MANUFACTURE, CALIBRATION AND USE OF BILIRUBIN RADIOMETERS
10:30 - 10:45	OP58 Egemen Kaymaz, TR ANALYSIS OF LIGHTING ENERGY CONSUMPTION THROUGH COST-OPTIMAL INVESTMENTS FOR RESIDENCES: A CASE STUDY IN TURKEY		OP33 Aiman Raza, FR HDR IMAGING FOR LOW LIGHT HYPERSPECTRAL ACQUISITION
10:45 - 11:00	OP71 Sermin Onaygil, TR ENERGY SAVINGS FOR ADAPTIVE LED CONVERSION IN EXISTING ROAD LIGHTING INSTALLATIONS		OP72 Kazim Hilmi Or, TR LI-FI DATA TRANSMISSION PERSPECTIVE IN HUMAN ARTIFICIAL VISION IN BLIND PATIENTS
11:00 - 11:20	Discussion		Discussion

11:20 - 12:30	LUNCH BREAK
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**Wednesday, September 20
Afternoon**

	Linhart Hall	Kosovel Hall	M1 Hall
	Oral Presentations		Workshop/Seminar
12:30 - 14:05	PA7-1 D2/D6 - Integrative lighting 3 Chair: Vineetha Kalavally, MY	PA7-2 D1 - Colour Chair: Li-Chen Ou, TW	WS5 (D4) Convenor: Sermin Onaygil, TR
12:30 - 12:45	OP20 Manuel Spitschan, DE GUIDELINES AND CHECKLIST FOR DOCUMENTING AND REPORTING HUMAN LABORATORY-BASED OCULAR LIGHT EXPOSURE INTERVENTIONS	OP64 Jiaye Li, US CHARACTERISING CAM02UCS PREDICTIONS OF PERCEIVED COLOURFULNESS AND HUE CHANGES AT DIFFERENT LIGHT LEVELS DUE TO HUNT EFFECT	METRICS FOR THE DESIGN AND IMPLEMENTATION OF ROAD LIGHTING
12:45 - 13:00	OP19 Niloufar Tabandeh, DE PHYSIOLOGICALLY-RELEVANT SPECTRAL AND ALPHAPHOTOMETRIC CHARACTERISATION OF NATURAL SCENES ACROSS TIME AND SPACE	OP32 Yoshi Ohno, US A COLOUR FIDELITY MODEL BASED ON HUNT EFFECT	
13:00 - 13:15	OP82 Tongyue Wang, CN EFFECTS OF FULL-DAY DYNAMIC LIGHTING PATTERNS ON HORMONE CONCENTRATION, CORE BODY TEMPERATURE AND SUBJECTIVE ALERTNESS AT BEDTIME IN CONFINED SPACES	OP48 Kaida Xiao, GB TESTING COLOUR-DIFFERENCE FORMULAS FROM LMS COLOUR SPACES INSPIRED IN CIELAB	
13:15 - 13:30	OP83 Yanni Wang, CN EFFECTS OF ZERO BLUE LIGHTING ON SLEEP, MOOD AND SUBJECTIVE ALERTNESS OF OCCUPANTS IN ANTARCTIC	OP54 Toshie Iwata, JP METRICS INDICATING PROPERTIES OF LIGHT COLOUR AND SUBJECTIVE EVALUATION OF COLOUR APPEARANCE	

13:30 - 13:45	<p>OP84 Junli Xu, CN EVALUATION OF ANNUAL DYNAMIC LIGHT VARIATION FOR NON-VISUAL EFFECTS: A CASE STUDY IN GROUND FLOOR CLASSROOMS OF CHINESE MIDDLE SCHOOL BASED ON LARK 2.0 SIMULATION TOOL</p>	<p>OP65 Yan Lu, GB A NEW DATABASE OF HUMAN SKIN COLOUR</p>	
13:45 - 14:05	Discussion	Discussion	

14:05 - 14:30	COFFEE BREAK
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	Linhart Hall	Kosovel Hall	M1 Hall
	Oral Presentations		
14:30 - 16:05	<p>PA8-1 D1/D3 - Glare and discomfort Chair: Kaida Xiao, GB</p>	<p>PA8-2 D1/D3 - Indoor lighting Chair: Anna Pellegrino, IT</p>	<p>PA8-3 D4 - Outdoor integrative lighting Chair: Annika Jägerbrand, SE</p>
14:30 - 14:45	<p>OP56 Sneha Jain, CH IS THERE AN EFFECT OF MACULAR PIGMENT DENSITY ON DISCOMFORT GLARE IN INDOOR DAYLIGHT CONDITIONS?</p>	<p>OP50 Xinyi Hao, CN A STUDY OF THE PSYCHOLOGICAL GAIN OF ARTIFICIAL VIEW WINDOWS IN A WINDOWLESS SPACE</p>	<p>OP7 Shahab Gorjimahlibani, GB DO FEMALE PEDESTRIANS EXPRESS A LOWER DEGREE OF REASSURANCE THAN MALE PEDESTRIANS? AND DOES ROAD LIGHTING HELP?</p>
14:45 - 15:00	<p>OP18 Geraldine Quek, SG INVESTIGATING MULTIPLE GLARE SOURCES IN DAYLIT CONDITIONS</p>	<p>OP27 Craig Bernecker, US 50 YEARS LATER: EXTENDING THE WORK OF JOHN FLYNN AND CIE STUDY GROUP A</p>	<p>OP47 Aysheh Alshdaifat, GB ROAD LIGHTING AND ROAD USER ALERTNESS AT NIGHTTIME: TESTING THE NULL FINDINGS OF GIBBONS AND BHAGAVATHULA</p>
15:00 - 15:15	<p>OP46 Zeynep Ekim, SE PERCEPTION OF GLARE IN RELATION TO THE CIE SCALE ON UNIFIED GLARE RATING (UGR) AND THE IMPACT OF AMBIENT LIGHT ON BOTH UGR AND SUBJECTIVE GLARE INDEX SCALES (SGI)</p>	<p>OP43 Siyao Cui, CN PHOTOMETRIC, PSYCHOLOGICAL AND NEUROPHYSIOLOGICAL ASPECTS OF DIFFERENCES SEATING LOCATIONS IN SELF-STUDY ROOM</p>	<p>OP78 Péter Schwarcz, HU CALCULATION METHOD AND EVALUATION OF POSSIBLE EFFECT ON CIRCADIAN SYSTEM OF DRIVERS UNDER TYPICAL STREETLIGHTING CONDITIONS</p>
15:15 - 15:30	<p>OP51 Naoya Hara, JP VISUAL CHARACTERISTICS IN THE DISCOMFORT GLARE EVALUATION MODEL IN ACCORDANCE WITH THE VISUAL SYSTEM</p>	<p>OP85 İpek Yalçın, TR ATMOSPHERE DECIPHERED: LUMINANCE CONTRAST MEASURE FOR LIGHTING DESIGN</p>	<p>OP87 Xianxian Zeng, CN EXPLORING THE RESTORATIVE POTENTIAL OF DAYTIME AND NIGHTTIME SCENERY IN CAMPUS SPACE: PHYSIOLOGICAL, PSYCHOLOGICAL AND BEHAVIOURAL ANALYSIS</p>
15:30 - 15:45	<p>OP88 Steve Fotios, GB DISCOMFORT FROM GLARE: WHY WE NEED A CIE TECHNICAL COMMITTEE TO REPORT ON BEST PRACTICE FOR COMMONLY USED METHODS AND TO PROPOSE NEW METHODS</p>	<p>OP9 Kevin Houser, US A CORE LIGHTING CURRICULUM FOR UNIVERSITY STUDENTS</p>	<p>OP49 Ronald Gibbons, US NATURALISTIC ASSESSMENT OF THE IMPACT OF ROADWAY LIGHTING ON MELATONIN</p>
15:45 - 16:05	Discussion	Discussion	Discussion

	Linhart Hall
16:05 - 16:35	CLOSING SESSION

	Konnex klub
18:00 - 22:00	Badminton tournament

The following table provides an overview of the submitted full papers of the oral presentations, presented posters and posters presented at the conference. The papers are published in the proceedings in consecutive order of presentation.

CIE 2023 conference papers were accepted on the basis of double-blind abstract review. The Proceedings papers are published as supplied by the authors.

Invited Presentation			
Paper No.	Author(s)	Title of paper	Page No.
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PAPERS PART 1

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