

CCPR/CIE Expert Workshop

100 Years of $V(\lambda)$ and Future of Photometry

3 June 2024
BIPM, Sèvres, France

Final Program (draft)

Opening 9:00 Yoshi Ohno (Workshop Chair)
Maria Luisa Rastello (CCPR), Jennifer Veitch (CIE), Joële Viallon (BIPM)

Session 1 History of $V(\lambda)$ and photometric units

Moderator: Maria Luisa Rastello (CCPR President)

- 9:20 A short history of light measurement in the CIE
Jennifer Veitch (CIE President)
- 9:40 The BIPM and the CIE: 100 years of cooperation - An overview of the main developments in the definition of the photometric units
Celine Fellag Ariouet, BIPM
- 10:00 Derivation of 1924 $V(\lambda)$ and other spectral luminous efficiency functions
Yoshi Ohno, NIST, USA
- 10:20 High level objective of photometry and SI definition of the candela
Peter Blattner, METAS, Switzerland (CIE Past President) & Gael Obein, LNE-CNAM, France
- 10:40 Coffee break

Session 2 History of CIE Colorimetry and Cone Fundamentals

Moderator: Kaida Xiao (CIE Division 1 Director)

- 11:10 History of CIE 1931 and 1964 standard colorimetric systems
Sophie Jost, ENTPE, France
- 11:30 Development of cone fundamentals – CIE 170-1 and CIE 170-2
Andrew Stockman, University College London, UK
- 12:00 CIE's direction for cone-fundamental based colorimetry
Lorne Whitehead, University of British Columbia, Canada (CIE TC 1-98 Chair)
- 12:30 Demonstration of $V(\lambda)$
Gael Obein, LNE-CNAM, France
- 12:50 Lunch (provided at BIPM)

Session 3 Photometry with Cone Fundamentals

Moderator: Dong-Hoon Lee (CIE Division 2 Director)

- 13:50 CIE's direction for cone-fundamental based photometry
Tony Bergen (CIE RF05 Convener, CIE Vice-President Technical)
- 14:10 Impact of introducing cone-fundamental-based $V_F(\lambda)$ or $V_{F10}(\lambda)$ in applications
Hiroshi Shitomi, NMIJ, Japan
- 14:30 Experimental research on brightness perception with $V_F(\lambda)$ and $V_{F10}(\lambda)$
1. Vision experiment on brightness comparison for 1924 $V(\lambda)$ and $V_{F10}(\lambda)$
Jiaye Li, NIST, USA
- 14:50 2. Estimating brightness perception using the current standard and cone-fundamental-based spectral luminous efficiency functions
Dorukalp Durmus, Pennsylvania State University, USA
- 15:10 Coffee break
Group photo

Session 4 Discussion for future directions for photometry and colorimetry

Moderator: Yoshi Ohno

Rapporteur: Dong-Hoon Lee

Panelists: A. Stockman, L. Whitehead, P. Blattner, M.L. Rastello, T. Bergen

- 15:40 Open discussion
- 17:10 Conclusions, future actions

Celebration of 100 years of $V(\lambda)$

- 17:20 Announcement of Winners of CIE 100 years of $V(\lambda)$ Art Competition
Toast, Martin Milton (BIPM Director)
- 17:40 Closing
Refreshments