

Friday 5 July, 2024

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| 12.30 – 13.00 | Opening | Kosovel Hall |
| 13:00 – 14:15 | Session 1: Chromatic Mechanisms I Chairperson: Steven Shevell | |
| 13:00 – 13:15 | The importance of hue Laysa Hedjar , Matteo Toscani, Karl R. Gegenfurtner (Germany) | |
| 13:15 – 13:30 | The caerulean line and the colour space of the anomalous trichromat John Mollon , Hugo Smith, Lynne Ling, Ecenur Bilgiç, Maria Mak, Marina Danilova (United Kingdom) | |
| 13:30 – 13:45 | Spatial and chromatic discrimination thresholds in small retinal patches that vary in local L:M cone ratio Allie Hexley , Maxwell Greene, Austin Roorda, William Tuten, Hannah Smithson (United Kingdom) | |
| 13:45 – 14:00 | Colour sensitivity as a function of size: Psychophysically measured discrimination ellipses Marina Danilova (United Kingdom) | |
| 14:00 – 14:15 | Spectral measurements of natural objects in the southern cone of South America Pablo Barrionuevo , Agustín Gutierrez, Bárbara Silva, José Fanchini, Takuma Morimoto, María Sandoval Salinas (Argentina) | |
| 14:15 – 14:45 | Coffee Break | Foyer II |
| 14:45 – 16:00 | Session 2: Chromatic Mechanisms II Chairperson: Neil Parry | Kosovel Hall |
| 14:45 – 15:00 | How color affects object-substitution masking and why it matters Steven Shevell , Ryan Lange, Michael McNicholas (United States) | |
| 15:00 – 15:15 | Colour perception of flickering light in the phantom array Rytis Stanikunas , Alvydas Soliunas, Remigijus Bliumas, Karolina Jocbalyte, Algirdas Novickovas (Lithuania) | |
| 15:15 – 15:30 | Role of eye movements in capturing global colour statistics in outdoor scenes Takuma Morimoto , Luna Wang, Kinjiro Amano, David H. Foster, Sérgio M. C. Nascimento (Portugal) | |

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| 15:30 – 15:45 | Quantifying CIE alpha-opic signals in the built environment Samuel Ponting , Hannah Smithson, Ruth Kelly Waskett, Manuel Spitschan (United Kingdom) | |
| 15:45 – 16:00 | Binocular facilitation of the ocular following response in chromatic pathways Annie Y. Morsi , Rowan J. Huxley, Daniela Marinova, Alex R. Wade, Daniel H. Baker (United Kingdom) | |
| 16:00 – 16:15 | Mini Break | Foyer II |
| 16:15 – 17:30 | Session 3: Chromatic Mechanisms III Chairperson: Marina Danilova | Kosovel Hall |
| 16:15 – 16:30 | Self-supervised learning of colour vision purely from optic nerve signals Atsunobu Kotani , Jessica Lee, Alexander Belsten, Bruno Olshausen, Ren Ng (United States) | |
| 16:30 – 16:45 | Local variation in cone spectral topography is revealed by sensitivity to fine-grained red and green targets Maxwell Greene , Vimal Pandiyan, Ramkumar Sabesan, William Tuten (United States) | |
| 16:45 – 17:00 | Mapping the foveolar S-cone scotoma with adaptive optics microperimetry Yiyi Wang, Maxwell Greene, Kendall Kohout, Congli Wang, James Fong, Ren Ng, Austin Roorda, William Tuten (United States) | |
| 17:00 – 17:15 | The effect of macular pigment compensation on the measurement of S-cone mediated temporal sensitivity Neil Parry , Ian Murray (United Kingdom) | |
| 17:15 – 17:30 | Pi4, Pi5 and chromatic brightness: Three spectral broadening phenomena that can be predicted from known (but neglected) gated neural interactions in vision - <i>on line</i> presentation Vincent Billock , Adam Preston (United States) | |
| 17:30 – 17:45 | Mini Break | Foyer II |
| 17:45 – 18:45 | Invited speaker Jenny Bosten (United Kingdom) Cortical colour representations <i>Introduced by Manca Tekavčič Pompe</i> | Kosovel Hall |
| 19:00 – 21:00 | Welcome Reception | Club CD |

Saturday 6 July, 2024

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| 09:00 – 10:15 | Session 4: Colour Vision Assessment Chairperson: Allie Hexley | Kosovel Hall |
| 09:00 – 09:15 | Estimating individual cone fundamentals and colour matching functions Andrew Stockman , Ronnier Luo, Keyu Shi, Andrew Rider (United Kingdom) | |
| 09:15 – 09:30 | Modelling wavelengths and spectral half power bandwidths for Rayleigh equation anomaloscopes Stephen John Dain , Jeffery K. Hovis (Australia) | |
| 09:30 – 09:45 | Testing the reliability and validity of Rayleigh matches and heterochromatic flicker photometry settings on an Arduino-based LED device Dana Turner , Liana Keesing, Joshua Gray, Takuma Morimoto, Michelle McClements, Robert MacLaren, Allie Hexley, David Brainard, Hannah Smithson (United Kingdom) | |
| 09:45 – 10:00 | An iPhone-based anomaloscope for accessible, accurate color vision testing Dragos Rezeanu , Maureen Neitz, Jay Neitz (United States) | |
| 10:00 – 10:15 | Assessing chromatic discrimination in individuals varying in iris colour and race Nnaemeka Nwanedo , Robin Owen, Margarita Zlatkova, Galina Paramei (United Kingdom) | |
| 10:15 – 10:45 | Coffee Break | Foyer II |
| 10:45 – 12:15 | Session 5: Colour Vision Defficiency and Development Chairperson: Jan Kremers | Kosovel Hall |
| 10:45 – 11:00 | Theory of human tetrachromatic color experience Jessica Lee , Varun Srivastava, Nicholas Jennings, Ren Ng (United States) | |
| 11:00 – 11:15 | Attempting to elicit tetrachromacy in trichromatic human subjects via optical stimulation of individual photoreceptors at population scale Ren Ng , Atsunobu Kotani, James Fong, Hannah K. Doyle, Jessica Lee, Congli Wang, Austin Roorda (United States) | |

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| 11:15 – 11:30 | Optimality of contrast encoding in anomalous trichromacy Kenneth Knoblauch , Jenny Bosten, J. S. Werner (France) | |
| 11:30 – 11:45 | The eye movements of color deficient observers Doris Braun , Karl Gegenfurtner (Germany) | |
| 11:45 – 12:00 | Patients' awareness of their color vision deficiency Zane Jansone-Langina (Latvia) | |
| 12:00 – 12:15 | Meridional anisotropies in young adults comparing oriented grayscale gratings, and similar oriented natural scenes Mei Ying Boon , Kelly Le, Suhaima Adil, Agnes Choi (Australia) | |
| 12:15 – 13:15 | Lunch | Foyer II |
| 13:15 – 15:00 | Poster Session 1 & Coffee Break <i>Sponsored by The Colour Group (United Kingdom)</i> | Foyer II |
| 15:00 – 15:30 | Session 6: Colour and Retina Chairperson: Beatrix Feigl | Kosovel Hall |
| 15:00 – 15:15 | L- and M-cone driven ERGs obey the Ferry-Porter law Jan Kremers , Cord Huchzermeyer, Avinash Aher (Germany) | |
| 15:15 – 15:30 | The melanopsin-isolated spatiotemporal chromatic visual response Andrew Zele , Thomas Nugent (Australia) | |
| 15:30 – 16:30 | Invited speaker Deniz Dalkara (France) Vision restoration and color vision <i>Introduced by Nika Vrabič</i> | Kosovel Hall |
| 16:30 – 16:45 | Mini Break | Foyer II |
| 16:45 – 17:45 | Invited speaker Tessa Dekker (United Kingdom) Neuroplasticity in a rod-only visual system receiving cone rescuing gene therapy <i>Introduced by Marko Hawlina</i> | Kosovel Hall |

| Poster Board | Poster Session 1 Foyer II |
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| P-1 | Binocular interactions for chromoluminance stimuli measured with SSVEP <u>Alex Carter</u> , Daniel Baker, Antony Morland, Abbie Lawton, Alex Wade (United Kingdom) |
| P-2 | A comparison of two approaches that use SSVEPs to characterise cortical colour tuning functions <u>Ana Rozman</u> , Chris Racey, Jenny M. Bosten (United Kingdom) |
| P-3 | Cataract effect on chromatic resolution and colour perception <u>Renārs Trukša</u> , Zane Jansone-Langina, Sergejs Fomins, Andrejs Solomatins (Latvia) |
| P-4 | Complementary Colours in Heterochromatic Flicker Fusion <u>Christoph Witzel</u> (United Kingdom) |
| P-5 | Blackness perception is affected by the stimulation of melanopsin cells <u>Masahiko Yamakawa</u> , Katsunori Okajima, John S. Werner (Japan) |
| P-6 | Custom colour selection improves symbology identification <u>Amanda Douglass</u> , Madeline Baker, Kate Coffey, Lars Kooijman, Larry Abel (Australia) |
| P-7 | Colour-music association is mediated via S-(L+M) colour pathway rather than by the blue-yellow one <u>Misha Vorobyev</u> (New Zealand) |
| P-8 | Warm/cool judgements as a function of hue, value and chroma <u>Frederic Devinck</u> , Kenneth Knoblauch (France) |
| P-9 | Influences of melanin and hemoglobin changes on facial color perception <u>Yuanyuan He</u> , Takahisa Kitano, Hiromi Sato, Yoko Mizokami (Japan) |
| P-10 | Asymmetries in colour search <u>Jake Manalansan</u> , Camilla Simoncelli, Michael Webster (United States) |
| P-11 | Emergence of selective L-M cone antagonism from efficient coding of spatiochromatic natural images <u>Alexander Belsten</u> , Bruno Olshausen (United States) |
| P-12 | Electrophysiological evidence for a GABA-mediated feedforward pathway in the outer retina for mediating color vision <u>James A. Kuchenbecker</u> , Dragos Rezeanu, Sara Patterson, Maureen Neitz, Jay Neitz (United States) |

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| P-13 | <p>Color processing is constrained by eye optics in the retina of nocturnal primates</p> <p>Olivier Marre, Rémi Baroux, Louiza Arouche-Delaperche, Thomas Buffet, Antoine Chaffiol, Valérie Forster, Guilhem Glaziou, Awen Louboutin, Gabriel Mahuas, Déborah Varro, Samuele Virgili, Fabien Pifferi, Matias Goldin (France)</p> |
| P-14 | <p>Evaluation of the Waggoner Computerized Color Test in Detecting Color Vision Deficiency</p> <p>Ali Almustanyir (Saudi Arabia)</p> |
| P-15 | <p>The correlation between colour temperature and glare during night driving</p> <p>Isabel Arranz, Eduardo G Vicente, Teresa González-Arteaga, Luis A Issolio, Beatriz M Matesanz (Spain)</p> |
| P-16 | <p>Evaluation of two novel, tablet-based color vision tests</p> <p>Michael Crognale, Christabel Arthur, Jingyi He, Peter Bex, Jan Skerswetat (United States)</p> |
| P-17 | <p>Designing and developing a portable five-primary photostimulator for investigating melanopsin's role in color vision, tailored for rural environments</p> <p>Jose Maria Fanchini, Maria L. Sandoval-Salinas, Pablo A. Barrionuevo (Argentina)</p> |
| P-18 | <p>Diversity in colour vision</p> <p>Katsuaki Sakata (Japan)</p> |
| P-19 | <p>Difficulties color vision defectives encounter when interacting with digital displays at school and work</p> <p>Jeff Hovis, Sandra Mazur, Shankaran Ramaswamy (Canada)</p> |
| P-20 | <p>The relationship between types of anomalous trichromats and observer metamerism on wide-gamut display</p> <p>Taiju Inoshita, Tsukasa Muraya, Shoji Sunaga (Japan)</p> |
| P-21 | <p>Color categories in normal and color-deficient observers</p> <p>Jesse Macyszko, Fatemeh Basim, Erin Goddard, Michael Webster (United States)</p> |
| P-22 | <p>Colour naming of natural colours in normal trichromats and dichromats</p> <p>Dora N. Marques, José A. R. Monteiro, Joana B. S. Costa, Joana F. A. Sequeiros, João M. M. Linhares, Sérgio M. C. Nascimento (Portugal)</p> |
| P-23 | <p>A preterminal nonsense mutation in the short-wavelength-sensitive cone pigment gene of hedgehogs with unclear functional consequences.</p> <p>Martin Glösmann, Barbora Černá Bolfíková, Anna Bannikova, İslam Gündüz, Michael Wolfram (Austria)</p> |
| P-24 | <p>Colour statistics of colour-labelled objects created by generative AI</p> <p>Daniel Joyce, Yujin Wang, Michael Webster (Australia)</p> |

Sunday 7 July, 2024

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| 09:00 – 10:15 | Session 7: Colour Cognition I Chairperson: Jasna Martinovic | Kosovel Hall |
| 09:00 – 09:15 | Hue-specific effects of lighting on perceived atmosphere Giulio Palma , Nicholas Kelley, Erich Graf, Christoph Witzel (United Kingdom) | |
| 09:15 – 9:30 | Increasing colour information from natural scenes during visual search David Foster , Kinjiro Amano (United Kingdom) | |
| 9.30 – 9.45 | Active visual search for coloured targets in virtual outdoor environments Yan Lu , David H. Foster, Boris Otkhmezuri, Paul A. Warren (United Kingdom) | |
| 9:45 – 10:00 | The colour statistics of objects and an investigation of their neural representation Ian Pennock , Jenny Bosten, Anna Franklin (United Kingdom) | |
| 10:00 – 10:15 | The use of colours in complex colour compositions by individuals with and without artistic education Sergio Nascimento , Patrícia Oliveira, João Linhares, Cláudia Feitosa-Santana (Portugal) | |
| 10:15 – 11:15 | Verriest Lecture Karl Gegenfurtner (Germany) Color vision: from pixels to objects <i>Introduced by Sergio Nascimento</i> | Kosovel Hall |
| 11:15 – 11:45 | Group photo | |
| 11:45 – 12:45 | Lunch Break | Foyer II |
| 12.45 – | Excursion, Conference Dinner | |

| Monday 8 July, 2024 | | |
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| 09:30 – 10:30 |  The EMBO Keynote Lecture Tom Baden (United Kingdom) Ancestral photoreceptor diversity as the basis of visual behaviour | Kosovel Hall |
| | <i>Introduced by Gregor Belušič</i> | |
| 10:30 – 10:45 | Mini Break | Foyer II |
| 10:45 – 12:00 | Session 8: Comparative Colour Vision Chairpersons: Gregor Belusic, Daniel Osorio | |
| 10:45 – 11:00 | Spectral opponency in butterfly retina Gregor Belusic , Marko Ilic, Primoz Pirih, Kentaro Arikawa (Slovenia) | |
| 11:00 – 11:15 | How do bumblebees interact with iridescent objects? Li Shiwen , Emily Stephenson, Ananya Albrecht-Buehler, Natalie Hempel de Ibarra, Hannah Smithson (United Kingdom) | |
| 11:15 – 11:30 | Modelling colour appearance for humans and birds by principles of efficient coding in early vision Daniel Osorio , Jolyon Troscianko (United Kingdom) | |
| 11:30 – 11:45 | Cross-cultural preference of the best daylight illuminant for viewing human faces Andreia E Gomes , Sérgio M. C. Nascimento, João M. M. Linhares (Portugal) | |
| 11:45 – 12:00 | Correcting images for individual differences in color appearance Camilla Simoncelli , Michael Webster (United States) | |
| 12:00 – 13:00 | Lunch | Foyer II |
| 13:00 – 14:00 | Business Meeting and Memorial | Kosovel Hall |
| 14:00 – 15:45 | Poster Session 2 & Coffee Break Sponsored by Optica | Foyer II |
| 15:45 – 16:45 | Session 9: Colour Cognition II Chairperson: Sergio Nascimento | Kosovel Hall |

15:45 – 16:00 **A comparative study of online and lab experiments for heterochromatic brightness**

Shuchen Guan, Robert Ennis, Karl Gegenfurtner (Germany)

16:00 – 16:15 **Changes in brain activity pattern by color tasks**

Ichiro Kuriki, Takato Arima, Takeshi Hamano, Shunsuke Takano, Kenichi Ueno (Japan)

16:15 – 16:30 **Breaching the spectral locus: novel chromaticities through cone-by-cone laser stimulation**

James Fong, Hannah K. Doyle, Congli Wang, Sofie R. Herbeck, John E. Vanston, Alexandra E. Boehm, Brian P. Schmidt, Pavan Tiruveedhula, Vimal Prabhu Pandiyan, Ramkumar Sabesan, William S. Tuten, Austin Roorda, Ren Ng (United States)

16:30 – 16:45 **Image and video percepts through cone-by-cone laser stimulation**

Hannah Doyle, James Fong, Congli Wang, Sofie R. Herbeck, John E. Vanston, Alexandra E. Boehm, Brian P. Schmidt, Pavan Tiruveedhula, Vimal Prabhu Pandiyan, Ramkumar Sabesan, William S. Tuten, Austin Roorda, Ren Ng (United States)

| Poster Board | Poster Session 2 Foyer II |
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| P-25 | Statistical image features explain the color and material perception of real-world surfaces Isamu Motoyoshi , Yan Zhang, Kyoka Oshima (Japan) |
| P-26 | Colour preference of individuals with artistic education Patrícia M. H. Oliveira , João M.M. Linhares, Claudia Feitosa-Santana, Sérgio Nascimento (Portugal) |
| P-27 | Impact of colour on recognition of cultural landscapes Galina V. Paramei , Yulia A. Griber (United Kingdom) |
| P-28 | Ageing and Colour Language in English Speakers Akvile Sinkeviciute , Heather Ferguson, Dimitris Mylonas (United Kingdom) |
| P-29 | Eye and Brain Predict Subjective Responses to Colour Combinations in Product Design Zhou Yao (China) |
| P-30 | S-cones contribute to smooth pursuit eye movement initiation Yuan Zhang , Shuchen Guan, Giulia Agosti, Doris I. Braun, Karl R. Gegenfurtner (Germany) |
| P-31 | Chromatic contrast effects on perception of lightness Ausra Daugirdiene , Rytis Stanikunas, Ian J. Murray (Lithuania) |
| P-32 | Averaging of illumination color for multi-illumination ensembles Ruiqing Ma , Ruiqing Xue, Keizo Shinomori (China) |
| P-33 | Red/green balance induction by bright and dark surrounds using real-world objects Qiang Gao , Tanner DeLawyer, Keizo Shinomori (Japan) |
| P-34 | Decline of color constancy from systematic color shifts of chromatic background surfaces Tengxuan Hou , Ruiqing Ma, Tanner DeLawyer, Keizo Shinomori (Japan) |
| P-35 | Generalizing color tests to search for human tetrachromacy Nicholas Jennings , Varun Srivastava, Jessica Lee, Ren Ng (United States) |
| P-36 | The influence of glare generated by an LED lamp on pupillary behaviour: considerations about colour temperature Beatriz M Matesanz , Eduardo G Vicente, Pablo A Barrionuevo, Isabel Arranz (Spain) |
| P-37 | Colour vision and luminance discrimination throughout the life span Leticia Miquilini , Thaise Cristina Barbosa Ferreira, Joycianne Rodrigues Parente, Rosa Maria Guimarães Brito, Bruna Rafaela Silva Sousa, Maria Izabel Tentes Cortes, Marcelo Fernandes Costa, Dora Fix Ventura, Paulo Roney Kilpp Goulart, Givago Silva Souza (Brazil) |

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| P-38 | Prototype tetrachromatic printing system <u>Varun Srivastava</u> , Jessica Lee, Nicholas Jennings, Ren Ng (United States) |
| P-39 | Electrophysiological evaluation of human color vision <u>Ana Barbara Uršič</u> , Manca Tekavčič Pompe, Andrej Meglič, Maja Šuštar Habjan, Gregor Belušič, Marko Ilić (Slovenia) |
| P-40 | Colour vision assessment in infants and toddlers based on the principle of preferential looking using eye tracking device <u>Katja Vojkovič</u> , Irena Tavčar, Nika Vrabič, Manca Tekavčič Pompe (Slovenia) |
| P-41 | Difficulties color vision defectives encounter when interacting with digital displays in gaming and other recreational activities <u>Sandra Mazur</u> , Jeff Hovis, Shankaran Ramaswamy (Canada) |
| P-42 | Neural network to predict colour naming by dichromats by learning from naming patterns of normal trichromats <u>José A. R. Monteiro</u> , Dora N. Marques, Joana B. S. Costa, Joana F. A. Sequeira, João M. M. Linhares, Sérgio M. C. Nascimento (Portugal) |
| P-43 | The possibility of color communication using color name of natural objects among different color vision types <u>Keito Nakatani</u> , Taiju Inoshita, Tsukasa Muraya, Shoji Sunaga (Japan) |
| P-44 | Assessing dichromats' advantage in color search tasks in multi-colored environments: the role of color appearance <u>Hector Palomo</u> , Tsukasa Muraya, Shoji Sunaga (Japan) |
| P-45 | Review of color vision clinical tests used in the field of occupational, traffic and sports medicine <u>Aljaž Kokole</u> , Maks Matej Cuzak, Ivan Butkevich, Manca Tekavčič Pompe (Slovenia) |
| P-46 | Improved chromatic melanopsin-mediated pupil function following photoreceptor enhanced light stimulation in Parkinson's disease <u>Beatrix Feigl</u> , Subodh Gnyawali, Andrew J. Zele (Australia) |
| P-47 | Advantages of using a new database of hyperspectral images of the skin of human faces <u>João M. M. Linhares</u> , Andreia E. Gomes, Sérgio M. C. Nascimento (Portugal) |
| P-48 | Can chromaticity coordinates be accurately measured by a camera? <u>Lin Shi</u> (China) |

| Tuesday 9 July, 2024 | | |
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| 09:00 – 10:15 | Session 10: Colour Cognition III Chairperson: David Foster | Kosovel Hall |
| 09:00 – 09:15 | Brightness, lightness, paleness: English color-term modifiers examined with color-survey data David Bimler (New Zealand) | |
| 09:15 – 09:30 | Re-examining EEG evidence for categorical colour processing Jasna Martinović , Galina Paramei, Yulia Griber (United Kingdom) | |
| 09:30 – 09:45 | Towards a perceptually uniform colour space using artificial neural networks Arash Akbarinia , Takuma Morimoto, Laysa Hedjar (Germany) | |
| 09:45 – 10:00 | The phenomenon of high pitched yellow Karen Gunther , Joshua Manfred, Corbin Strimel, Cameron Klabunde, Neil Dittmann (United States) | |
| 10:00 – 10:15 | Color impression evaluated by abstract and color-related semantic words and selection of appropriate colors for these words. Keizo Shinomori , Hana Takata (Japan) | |
| 10:15 – 10:45 | Coffee Break | Foyer II |
| 10:45 – 12:00 | Session 11: Colour Constancy Chairperson: Christoph Witzel | Kosovel Hall |
| 10:45 – 11:00 | Colour expectations across illumination changes Hamed Karimipour , Christoph Witzel (United Kingdom) | |
| 11:00 – 11:15 | Red apples, blue lights: How object and illumination colour influence perceived food quality Ilgin Cebioglu , Persephone Nuttall, Niamh Pollard, Lily Potts, Anya Hurlbert (United Kingdom) | |
| 11:15 – 11:30 | A computational neural model of achromatic colour perception driven by fixational eye movements Michael Rudd (United States) | |
| 11:30 – 11:45 | Evaluating color constancy illusions in terms of local contrast effects Tanner DeLawyer , Keizo Shinomori (Japan) | |
| 11:45 – 12:00 | Visual phenomena inconsistent with standard explanations of color constancy Arthur Shapiro , Yuki Kobayashi, Joseph DeNavas (United States) | |
| 12:00 – 12:30 | End of the meeting | Kosovel Hall |