

DALTONIANA

NEWSLETTER

OF THE INTERNATIONAL RESEARCH GROUP ON COLOUR VISION DEFICIENCIES

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LITERATURE SURVEY

Analysis of chromatic-adaptation effect by a linkage model, by K. TAKAHAMA, H. SOBAGAKI and Y. NAYATANI (Electro-technical Laboratory, Osaka Branch, Nakoji Amagasaki, Hyogo, 661, Japan) J. opt. Soc. Amer. 67/5, 651-656, 1977.

An adaptation-dependent linkage model in the visual pathway from the retina to the brain is described which accounts not only for the saturation change caused by change of adapting luminance but also for the effects of chromatic adaptations to different chromaticities on equal illuminance levels. The model permits predictions of the effects of chromatic adaptation. - Ingeborg Schmidt.

Psychophysical measurement of cortical colour mechanisms, reply to Meyer, by V. VIRSU and S. HAAPASALO (Department of General Psychology, University of Helsinki, Ritarikatu 5, SF00170 Helsinki 17, Finland), Perception 6, 236-238, 1977.

A rejection of Meyer's criticism (abstract in Daltoniana No. 28 p. 1) of a study (Virsu and Haapasalo, Perception 2, 31-40, 1973) on the relationship between channels for color and spatial frequency. The authors emphasize that their study yielded evidence that at least three different types of perceptual channel underlie our capacity to perceive the size and colour of objects. - Ingeborg Schmidt.

Differential threshold representation of color, by E. HITTA, M. ALVAREZ-CLARO and M. GUERRERO (University of Granada, Departamento de Fisica Fundamental, Granada, Spain), Atti Fond. G. Ronchi, 32, 882-893, 1977.

The causes of some anomalies found in the usual system of representation of differential threshold are analysed, and a conventional system is proposed as one of the possible solutions. - Lucia Rositani-Ronchi.

Vision with isoluminant colour contrast : 1. A projection technique and observations, by R.L. GREGORY (MRC Brain and Perception Laboratory, Department of Anatomy, University of Bristol, Bristol BS8 1TD, England) Perception 6, 113-119, 1977.

An optical technique is described for projecting two-color pictures, e.g. red and green, with controlled brightness contrast which may be set to zero at isoluminance. A single transparency is projected with a single lens by simultaneously projecting through transparent regions and from the surface of opaque regions of the transparency. Two lights independently control the intensity. Preliminary observations and conclusions about the problem of color-and brightness-contour registration in the visual channel are reported. - Ingeborg Schmidt.

Individual color functions, by M.L.F. DE MATTIELLO (Laboratorio de Investigaciones Sensoriales CONICET, Facultad de Medicina, Universidad de Buenos Aires, C.C. 53, Suc. 53, Argentina) Perception and Psychophysics 21/5, 396-398, 1977.

40 college students of both sexes, with normal color vision, were asked to estimate the magnitude of lightness for grays and for hues of constant and of variable colorimetric purity as well as the magnitude of saturation for hues at constant luminances. The samples were surface colors and grays viewed at 4° visual angle against a black background at about 1,000 lx daylight illumination. The best fitting power function for individual magnitude estimates as a function of luminance or saturation were determined by the method of least squares. Although there is some variation in the size of the exponents from one person to another, individual functions of saturation and lightness can be described by the power law. It was intended to use the information also for assessment of visual dysfunctions in subjects with congenital and acquired anomalies. - Ingeborg Schmidt.

Multidimensional scaling of subjective colors by color-blind observers, by Ch. W. WHITE, G.R. LOCKHEAD and N.J. EVANS (New School for Social Research, New York, N.Y. 10003 and Duke University, Durham, North Carolina, 27706, U.S.A.), Perception and Psychophysics 21/6, 522-526, 1977.

Six color-normal and 6 color-blind (3 medium protans, one medium deutan and two strong deutans, classified by the H-R-R plates) observers were asked to scale subjective colors like those on Benham's disk for similarity. The colors appeared on a rotating cylinder, one half of which was black the other white with thin black line segments of different length and position arranged in pairs. The observers were instructed to assign numbers to describe the similarity of colors within each of the line pairs. The inferred color spaces for the six normal observers resembled the familiar hue circle but the spaces for five red-green deficient observers (the data of a medium protan were not included in the averaged analysis) were compressed along the red-green axis. The data suggest that color blindness may involve variations of the central nervous system in addition to photopigment anomalies. - Ingeborg Schmidt.

Colorimetry by flicker (Colorimétrie par papillotage), by J.B. WEISS, Bull. Socs Ophtal. Fr. 75, 973-975, 1975.

A new solid state flicker colorimeter with red and green light emitting diodes is described. Critical fusion frequency for red and green can be measured. - Jean Vola.

Some remarks about the tritan-like trend of the 100-hue response, by L. RONCHI and S. STEFANACCI, Atti Fond. G. Ronchi 31, 159-166, 1976.

As it has been shown by Verriest, the Farnsworth's 100-hue test shows a "feeble" zone which corresponds to the points of maximum concentration of errors for congenital tritanopia. The question is set whether the alterations of chromatic discrimination tested on some people under high pressure Na-illumination are due to the failure of the test or they mirror a real alteration of the environment all viewing conditions. For this a method is proposed for the presentation and analysis of data collected and the authors are now undertaking a population study. - Franco Carta.

The Farnsworth-Munsell 100-Hue Test. A question of norms, by D.R. MALONE and H.J. HANNAY (Psychology Department, Auburn University, Auburn AL 36830, USA), Perceptual and Motor Skills, 44 No. 3 Pt. 2, 1249-1250, 1977.

The FM 100 Hue Test was administered to 120 right-handed males, age 17 to 36 years. Normal color vision was determined by the Bausch and Lomb modified Orthorater and Dvorine pseudo-isochromatic plates. The range of errors indicative of low, average and superior color discrimination deviated from the published norms. The data suggested that the range of error scores for average discrimination should be 34 to 105±1 instead of 20 to 100. The subjects made significantly fewer errors on the first quarter-series so that the assumption of random errors by color-normal males was not met. The possible causes of the differences are discussed. - Ingeborg Schmidt.

State of progress of a new direct observation anomaloscope, (Etat d'avancement d'un prototype d'anomaloscope à vision directe), by A. ROTH, J.C. VIENOT and J.C. RENAUD, Bull. Socs Ophtal. Fr. 75, 991-992, 1975.

Description of a new apparatus with fiber optics, interference filters and photometric wedges. The 10 mm observation field is circular and is viewed at 30 cm under a angle of 2°10'. Rayleigh and Trendelenburg matches can be obtained as well as spectral hue and saturation discrimination curves. - Jean Vola.

Evaluation of single-pigment shift model of anomalous trichromacy, by J. POKORNY and V.C. SMITH (Eye Research Laboratories, University of Chicago, 950 East 59th Str., Chicago, Ill. 60637, USA), J. opt. Soc. Amer. 67/9, 1196-1209, 1977.

The authors evaluated three aspects of the color vision of X-chromosomal linked anomalous trichromats using the single-pigment hypothesis according to which the primary defect is

a wavelength shift in the peak sensitivity of one of the visual photopigments. It could be shown that this shift results in reduction of the anomalous trichromat's r-g opponent chromatic channel. Further, the single-pigment hypothesis explains the poorer than normal discrimination of this class of observers typified by the acceptable match range on the anomaloscope. Neural or other factors which contribute to variability in discrimination are similar in normal and anomalous trichromats. Finally, in accordance with the single-pigment hypothesis, calculation of the r-g opponent chromatic channel can provide correct predictions of the spectral loci for unique yellow for anomalous trichromats. -Ingeborg Schmidt.

A closer look at the tritanopic convergence point, by P. WALRAVEN (Inst. for Perception TNO, Soesterberg, Netherlands), Vision Res. 14, 1339-1343, 1974.

Redetermination of the convergence center for tritanopia showed that the blue system is more sensitive than was concluded from L.C. Thomson and W.D. Wright's (1953) study. The spectral sensitivities of the 3 color mediating systems were derived. The ratio of the number of red, green, and blue receptors in normal trichromatic eyes was derived to be 32:16:1. - Patrice M. Dunn.

① Assessment of the three color mechanisms in the acquired color vision defects. (L'évaluation des trois mécanismes chromatiques dans la pathologie acquise de la vision des couleurs), by M. MAIONE, F. CARTA, E. BARBERINI, G. PITINO and L. SCOCCIANI (Clin. Oculistica, Univ. Parma), Bull. Socs Ophtal. Fr. 75, 967-972, 1975.

By means of a Goldmann perimeter and a second light source for increasing the background illuminance, two of the three mechanisms are adapted with blue, magenta and orange background. An object filtered by interference filters (491, 512, 542, 551, 582, 681 nm) are projected on the background and moved from periphery to center along the horizontal meridian. In older observers chromatic sensitivity is reduced especially for blue and red. In optic neuritis the sensitivity to green decreased; in maculopathy that to red was affected. - Jean Vola.

Clinical applications of macular absolute spectral thresholds. (Applications clinique des seuils spectraux maculaires absolus), by J. VOLA, G. LEPRINE and L. CORNU (Marseille), Bull. Socs Ophtal. Fr. 75, 983-990, 1975.

Foveal thresholds are measured by means of an 1°,9 object and interference filters with as peak wavelengths 400, 450, 480, 500, 550, 578, 600, 656 nm on a dark background. In 10 normal observers, after a 30 min dark adaptation, the curves show peaks at 440 nm and 525 nm, and a shoulder between 525 and 578 nm. Examples of results in congenital and acquired color vision defects are given and show the clinical interest of this method. - Jean Vola.

Diagnostic importance of investigation into the colour perception capacity in retinal affections, by V.N. MARINCHEV (Allunion Research Institute of Eye Diseases of the Ministry of Health Preservation, SSSR), Vestnik oftalmologii No. 1, 59-61, 1977.

The following tests for color deficiency are highly recommended for use in the ophthalmological practice : E.B. Rabkins polychromatic and pigment tables, a "9 spot test" by Marincev, the Amsler grid and the Bjerrum campimetry, because they permit early detection of pathology and the possibility to differentiate some affections of the retina and the optic nerve. They are accessible, simple and highly sensitive. - Ingeborg Schmidt.

Case report : Familial cone dysfunction, by M.C. MCKEE and P. MURPHY KEECH (School of Optometry, Indiana University, Bloomington, Indiana 47401, USA), J. amer. optom. Assoc. 48/8, 1040-1044, 1977.

The data from four generations of a family suggested a partial cone dysfunction. 8 cases had low visual acuity, normal peripheral fields, a few or no abnormalities of the central fields, no characteristic ophthalmoscopic data, in a few cases reduced flicker ERG, in some cases suspicious to abnormal EOG ratios. Color vision was tested with the AO HRR plates, in some cases also with the Farnsworth dichotomous and Farnsworth Munsell 100 hue test. Two cases showed a slight red-green defect. A 77 year old man who had beginning cataracts, suffered from diabetes and was on a digitalis medication, had a mild red-green and a strong blue-yellow defect. The transmittance was autosomal dominant with variable penetrance. - Ingeborg Schmidt.

Maculopathy with photopic predominance, Study and classification through functional testing, (Maculopatía a predominio fótico, Su estudio y clasificación mediante los exámenes funcionales), by A. GONELLA, A. DAMEL, J. MASSANISSO and G. SALAS BUZO, Archivos de Oftalmología de Buenos Aires 51, 147-152, 1976.

The classification, based on histological and physiological criteria, leads to four major categories. The first group included maculopathies caused mainly by damage of photopic components : Stargardt's disease, dominant macular dystrophy and cone dystrophy. The second group includes maculopathies with photopic predominance and slight scotopic alteration : associated Stargardt's disease, fundus flavimaculatus, mixed cone-rod dystrophy, and senile macular degeneration. The third group includes maculopathies with photopic predominance and accentuated scotopic damage : Stargardt's disease associated to central or pericentral pigmentary retinopathy. The fourth group includes maculopathies with moderate photopic and scotopic disturbances : fundus flavimaculatus, vitelliform degeneration, butterfly wing-like dystrophy,

Sjögren's pigmentary dystrophy, acute pigmentary epitheliopathy, and central chorioretinitis.

An example is given for each group. They were investigated by means of functional tests (visual acuity, visual field, colour vision and electroretinogram) associated to fluorescein angiography. - Maria de Mattiello.

Color discrimination in 23 cases of monolateral central serous retinopathy, by A. SERRA (Chair of Physiopathological Optics, University of Cagliari, Italy), Atti Fond. G. Ronchi, 32/5, 1977.

Twenty three patients, ranging from 20 to 50 years, were examined. One of their eyes were affected from central serous retinopathy. In 3 cases, color discrimination, as tested by the 100-hue test, was normal; in 9 cases an acquired yellow-blue defect was found; in the remainders, the response to the 100 hue test was considered as "anarchic". Visual acuity did not drop below 0.7 in 10 out of 23 cases. The contralateral eye was regarded as normal from the clinical stand point, but in a great part of them the 100-hue response total score was beyond Verriest's normal range. The question is set whether this fact can be interpreted as an early symptom of the disease in the contralateral, assumed healthy eye. - Lucia Rositani-Ronchi.

Color discrimination after ruby laser photocoagulation, Some possible sources of time variability, by A. SERRA (Chair of Physiopathological Optics, University of Cagliari, Italy), Atti Fond. G. Ronchi 32/6, 1977.

Twenty-two patients, suffering from monolateral central serous retinopathy, were tested before and after ruby laser photocoagulation by means of the 100-hue test. The time dependence of the total score suffers from inter-individual variability. Abstraction is made of 4 subjects without time changes in total score after photocoagulation. For the others the ratios of total score at various days to total score 1 day after treatment were calculated. The average data, plotted in semi-log coordinates, were found to be fitted by two straight lines, denoting a faster recovery during the first days than thereafter. Central serous retinopathy leads to an acquired tritan-like defect. The early consequences of photocoagulation (in agreement with Koellner's law) lead to a similar defect. The question arises whether the long-term effects, involving a spread across deeper retinal layers, lead to a red-green defect, according to Verriest's classification. The conclusion is drawn that inter-individual variability is the outcome of the interaction between the evolution of retinopathy and both early and late effects of photocoagulation. - Lucia Rositani-Ronchi.

A case of pure alexia with color anomia (in ital.), by G. GAINOTTI, C. CALTAGIRONE and S. CARECCHI (U. Cattolica del Sacro Cuore, Med. School, Milan, Italy), Arch. di Psicologia, Neurologia e Psichiatria 35, 144-163, 1974.

Presents a case study of the onset of "pure" alexia associated with right homonymous homianopia and color anomia following a transient left hemisphere ischemia. The patient presented no evidence of aphasia and no disturbance of writing, but he showed a clear literal alexia, and could read only by using his finger to trace the outline of each letter. Furthermore, he was completely unable to name and to select colors but he could match them for brightness and saturation. Findings are discussed from the viewpoint of "visual agnosia" and "visual-verbal disconnection." - Patrice M. Dunn.

Marijuana and vision - after ten years use in Costa Rica, by W. DAWSON, C.F. JIMENEZ-ANTILLON, I.M. PEREZ and J.A. ZESKIND (Department of Ophthalmology and Physiology, University of Florida, Gainesville, Florida, USA, and Hospital Mexico, San Jose, Costa Rica), Invest. Ophthal. 16/8, 689-699, 1977.

Tests of visual functions were applied to a group of users of marijuana who had smoked it for ten or more years, and a non-users group, all free of clinical signs of eye disease. The users had agreed not to consume marijuana for at least 3 hours before the test. All findings from both groups were within established limits of normalcy. Several trends and differences were found between the groups. Following user trends were found : increased basal lacrimation, increased intraocular pressure, increased photosensitivity, decreased Snellen acuity, decreased dark adaptation, decreased color-match limits and brightness limits. Color vision was examined by the Hecht-Shlaer anomaloscope. The users required more red in the color match midpoints which, however, was not significant. - Ingeborg Schmidt.

The handicap of color blindness, by G. HEATH (Indiana U.), J. am. Optom. Assoc. 45, 62-69, 1974.

Briefly describes the major types of color vision defects and discusses the handicaps in performance and learning which may cause. Some suggestions for counseling and other remedial measures are presented. - Patrice M. Dunn.

What can be done for the color blind? by J. KESSLER (229 East 79th Str., New York, N.Y., 10021, USA) Ann. Ophthal. 9/4, 431-433, 1977.

After reviewing very shortly what has been done to improve distinction of colors by color blind persons the author speculates on some possibilities. Even if it were possible to achieve or enhance formation of visual pigments in the visual receptors of a color blind, there is no assurance that the changed information supplied to the brain could be used to broaden his color vision. The use of red and green filters which enable the red-green blind to arrive to some crude judgement could be

improved to some extent by alternating these filters at adequate speed in front of the eye. The color judgment achieved in this way is still very unsatisfactory but better than nothing. The author emphasizes that a color blind should exclude himself from any occupation where his defect may be even a minor handicap. - Ingeborg Schmidt.

Color vision : Symposium conducted at the spring meeting, 1971, by L.M. HURVICH et al. (Univ. Penn.), Wash. D.C. : Natl. Acad. of Sciences, 1973.

Presents a series of studies which investigate deficiencies in color vision and compare armed forces color vision tests. The importance of color in visual signaling and in architecture is demonstrated, and comparative photointerpretation from pan-chromatic, color, and ektachrome infrared photography is described. - Patrice M. Dunn.

Visual sensitivity : significant within-species variations in a non-human primate, by G.H. JACOBS (Department of Psychology, University of California, Santa Barbara 93106, USA), Science 197, no. 4302, 499-500, 1977.

The test was forced-choice discrimination task using three circular transilluminated stimulus panels, 18° to 35° of visual angle, depending on the position of the unrestrained monkey. The animals were taught to press a lever adjacent to that stimulus panel which was differently illuminated from the other two. In a first test series either of two different monochromatic lights, 540 nm and 640 nm, was added to one of the three panels continuously illuminated with achromatic light. A sample of males was found to be substantially less sensitive to long wavelengths (640 nm) light than a group of females. The large differences disappeared when the animals were dark adapted. The two groups showed no significant difference in sensitivity to the middle wavelength (540 nm) light. In a second test series the effects of chromatic adaptation were measured. The thresholds for 540 nm and 640 were determined on panels illuminated continuously by light having the dominant wavelengths of 640 nm and 540 nm. An index was computed from the difference of the sum of the two heterochromatic threshold values and the sum of the two homochromatic threshold values. This index was greater on the 8 female monkeys tested and on 8 human normal trichromats than on 6 male monkeys and on a human protanope. It is known from earlier experiments that squirrel monkeys possess protanomalous color vision. Male squirrel monkeys seem to differ from females in the degree and may be in the nature of their color deficiency. - Ingeborg Schmidt.

VELHAGEN COLOR VISION TEST XXVIth ed.

By the courtesy of professor Velhagen I got the XXVIth edition of the Velhagen color vision test. I examined 50 color normals and 5 congenital color defectives (3 deutan, 2 protan); the results are represented in Table I.

Table I : RESULTS OF COLOR VISION EXAMINATION

Velhagen XXVIth Ed.

Plate nr.	To be read	50 color normals		C-plates to be read	5RG defectives (3D, 2P) did read :
		Number of misreadings	in detail		
1	26	0	-		
2	2	0	-		
3	RG	10	R6(8x); RC(1x); 6(1x)		
4	B5 or 85	8	BS(4x); B6(2x); 86(2x)		
5	42	0	-		
6	51	0	-		
7	6	1	8 or B?(1x)		
8	10	2	10(2x)	0	10(5x)
9	6	1	8(1x)		
10	2	1	0(1x)		
11	3	0	-		
12	CH	8	6H(2x); C14(1x); 614(1x); CH(1x); CA(1x); 11(1x)	31	37(2x); 31(1x); -(2x)
13	84	16	34(14x); 04(1x); 4(1x)	3	3(2x); -(3x)
14	65	10	66(9x); 58(1x)		
15	3	0	-		
16	182	26	8(26x)	8	8(5x)
17	F4	0	-		
18	6R or 66	0	-		
19	13	0	-		
20	F5	5	P5(3x); 15(1x); FS(1x)		
21	69	4	60(4)	00	00(4x); 60(1x)
22	2	0	-		
23	H5	6	HS(3x); H6(1x); K5(1x); N5(1x)		
24	E7	0	-	L	E7(5x)
25	5E	0	-		
26	49	0	-		
27	A4	0	-		
28	A9	1	A5(1x)		

In addition to these data there was no obvious difference between the readings of the two protan and of the three deutan defectives. - A. Pinckers

INTERNATIONAL RESEARCH GROUP ON COLOUR VISION DEFICIENCIES

The general Assembly of the International Federation of the National Ophthalmological Societies will be held in Kyoto in the International Conference Hall the 18th of May 1978 at 2 p.m. in the room C 2. As sponsored by the Federation the IRGCVD has one vote in the deliberations. Prof. M. MAIONE (Italy) and Dr. J. VOLA (France) have been appointed respectively as our delegate and as the suppleant. - Guy Verriest.

AIC STUDY ON COLOR-ORDER SYSTEMS

Terms of reference : To assemble data that define the colorimetric specification and describe the perceptual purposes of color-order systems intended for use with reflecting samples, and to issue a report describing the relationships between, and the distinctive features of, the major colour-order systems in existence. The systems studied should include Munsell, Colour Harmony Manual, O.S.A., DIN, Swedish NCS, CIE ($L^*u^*v^*$) and CIE ($L^*a^*b^*$).

Time Scale : The work to be completed, if possible, in time for the AIC 1981 Congress.

INTER-SOCIETY COLOR COUNCIL

The 47th Annual Meeting of the Inter-Society Color Council will be held at Loew's L'Enfant Plaza Hotel in Washington, DC, on April 16-18, 1978.

On April 17 a series of limited-attendance workshops entitled Color in Use will be held. They are directed primarily to those interested in color as it is used in art, design, and education. Moderators and topics of these workshops are Rolf Kuehni, "Color Quality Control in Industry;" Joy Turner Luke, "Visual Effects of Colored Lights;" Kenneth L. Kelly, "The Munsell System and the Universal Color Language;" Edwin K. Robinson, "Light Sources and Surface Color Appearance;" and Nadine Bertin, "Color Trends in Home Fashions and Housewares."

April 18 is devoted to a symposium on "Color and Illumination," chaired by William A. Thornton. Speakers and topics will be : Gunter Wyszecki, "Coloration by Daylight;" and the following under the general topic of "Coloration by Artificial Illuminants:" Charles W. Jerome, "Color-Rendering Index;" William A. Thornton, "Color-Preference Index and Color-

discrimination Index;" Alexander F. Styno, "Coloration by Specific Commercial Light Sources;" Eugene Allen, "Color Matches and Mismatches by Commercial Lamps;" and Gerald Howett, "Color Constancy." Dr. Thornton will close the symposium with summarizing remarks.

MELTING ON SENSORY AND PERCEPTUAL PROCESSES

During the 20th meeting of German Experimental Psychologists in Marburg (German Federal Republic), March 19 - 23, 1978, several sessions will be devoted to sensory and perceptual processes. Papers will include phenomenological, psychophysical, and neurophysiological studies of vision, hearing and other senses and will emphasize the interrelationship between subjective and objective data. All papers will be in English. The program of these sessions is being organized in consultation with the Experimental Psychology Society of the United Kingdom.

The sessions on sensory and perceptual processes will probably be held on March 20 - 22. Further information may be obtained from Dipl.-Psych. Klaus Kramer, Fachbereich Psychologie, Gutenbergstrasse 18, D-355 Marburg, West Germany.

REGIONAL SYMPOSIUM OF THE INTERNATIONAL RESEARCH GROUP
ON COLOR VISION DEFICIENCIES

DRESDEN (GERMAN DEMOCRATIC REPUBLIC) 5th - 6th SEPTEMBER 1978

PRELIMINARY INSCRIPTION FORM

(to be detached from one of the 1978 issues of Daltoniana and to be returned before 31st MARCH 1978 to Dr. MARRE, Augenklinik der MAD, Fetscherstr. 74, 8019 DRESDEN, German Democratic Republic)

This regional symposium held additionally to the international symposia of the I.R.G.C.V.D. is especially organized for the members of the socialist countries. It can also be attended by members and guests of other countries.

The main themes of this regional symposium will be :

1. Methods of examination of central and peripheral colour vision.
2. Practical aspects of colour vision.
3. Toxicology and colour vision.
4. Electrophysiological aspects of colour vision.

Free papers will be accepted.

Languages : English preferred, Russian and German possible (according to the practice of the society the authors are asked to insert for their oral presentation slides with English text). Abstracts of the papers have to be given to Dr. MARRE before the end of the symposium. They will be published in DALTONIANA.

PAPER AUTHOR(S) :
(one per form)
TITLE :
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.....

Theme 1, 2, 3, 4, free.
Wanted duration of oral presentation : 5, 10, 15 min.
Accommodation wanted for 0, 1, 2 persons

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