

temp: 34.7°C, accumulated UVA: 266.1kJ/m<sup>2</sup>). The back of 7 participants in B was exposed directly to 3 hr solar radiation. Then, all participants moved to a bioclimatic chamber (26°C, 60%RH, 1500 lx) and spent time quietly for additional 3 hr. Rectal and skin temperatures (forearm, thigh) were significantly lower in B than in A (15:00-16:30). Rectal temperature continued to be measured at home of each participant. The value (21:00-6:00) was significantly lower in B than in A. Participants had higher fatigue sensation (the questionnaire by Japan Society for Occupational Health), while wearing B. We would like to discuss the physiological mechanisms involved for these findings.

**PB2-7 Seasonal Changes in Solar Ultra-violet Radiation at Temperate (Nara, Japan) and subtropical (Hong Kong, China) Sites**

Kanako MURAMATSU<sup>1),2)</sup>, Yan XIONG<sup>2)</sup>, Chen LU<sup>2)</sup>, Shinobu FURUMI<sup>1)</sup>, Tadashi OISHI<sup>3)</sup>, Wang SHUXIAO<sup>4)</sup>, Junyan HH<sup>4)</sup>, Hiromi TOKURA<sup>4)</sup>, Yi LI<sup>4)</sup> and Morihiro YONEDA<sup>5)</sup>

1) KYOUSEI Science Center for Life and Nature, Nara Women's University, 2) Department of Information and Computer Sciences, Nara Women's University, 3) Nara Saho College, 4) The Hong Kong Polytechnic University, Hong Kong, China, 5) Faculty of Human Life and Environment, Nara Women's University

In order to compare the amount of solar ultra-violet radiation between different latitudinal areas and its effects on human physiology, we started continuous measurement of the solar radiation from 2001 on the roof top of Nara Women's University in Nara, Japan and from 2005 on the roof top of Hong Kong Polytechnic University in Hong Kong, China. The latitude of Nara and Hong Kong site is N 34.686 and N22.305, respectively. The daily average UV-B radiation in Nara was from 0.05 to 0.3 W/m<sup>2</sup>. In Hong Kong, it was 1.5 times higher than that in Nara in summer and 4 times higher in winter. The daily average UV-A radiation in Nara was from 2 to 16 W/m<sup>2</sup>. In Hong Kong, it was a little bit higher in summer and 1.7 times higher in winter. These changes were compared with the amount of ozone in Nara and Hong Kong. For UV-B, the tendency of the difference of the seasonal change of radiation and total amount of ozone at Nara and at Hong Kong coincide with each other.

**PB3-1 Visible or Invisible Perception of Letters Presented for the Suppressed Eye during Binocular Rivalry Reflects Attention Level for the Dominant Eye**

Hiroshi ASADA, Nao SAKAMOTO and Shinji

NAKASUJI

*Faculty of Liberal Arts and Sciences, Osaka Prefecture University*

According to the biased competition model of selective attention, attention should be able to enhance the attended percept and suppress the unattended percept. Frontal theta EEG rhythm (Fθ) often appears in the frontal area during concentrated performance of consecutive mental tasks and it has been thought to reflect focused voluntary attention and/or suppressed process of dispensable information. Meanwhile, during binocular rivalry, either information of two different images presented to each eye is alternately suppressed. Binocular rivalry and attention both involve selection of visual stimuli, but has been thought to affect perception quite differently. In this study, we explored whether Fθ was related to suppression of information from suppressed eye in binocular rivalry. We asked subjects to play computer game on the front display using the left eye, and at the same time, gray screen image was presented to the right eye using monocular head mounted display (HMD). Alphabets were randomly flashed on the HMD and subjects were asked to report it. EEGs were recorded with letter signals and reply. When subjects did not perform game yet, they correctly identified the alphabets and all of them did not show Fθ. During playing game, half of subjects showed Fθ and their ratio of detected letters significantly less than that of the other half subjects who didn't show Fθ. Though Fθ disappeared when letters were detected, Fθ rhythm continued when letters were undetectable. VEP components were evoked by detected letter but those could not be evoked when letters were undetected and P300-like deflection was observed in place of them. These results suggest the relationship between appearance mechanism of Fθ and suppression mechanism of processing information from suppressed eye during binocular rivalry. The attention level for the dominant image during appearance of Fθ might be higher than that during disappearance of Fθ.

**PB3-2 Anisotropy of the Induction Field in Shape Recognition in Chinese Characters**

Kenichiro KUTSUNA and Katsuhiko SHIMADA  
*Graduate School of Natural Sciences, Nagoya City University*

Potential-Field has been used for the study of visual stimulation till now with the predicted equation which was applied for a stimulus figure in vision by Yokose and Motokawa's induction-field theory by analogy with a law of Biot-Savart in electromagnetic field. We predicted that there was a