

EIIRIS Special Seminar

特別講演会のご案内



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Electronics-Inspired
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【日時】平成27年7月8日(水) 13:30-15:30

【場所】VBL3階プロジェクト研究交流室

【講演者とタイトル】

Computational Neuroscience Group Leader

Director of the INCF G-Node

Department Biology II

Ludwig-Maximilians-Universität München, Germany

Professor Thomas Wachtler

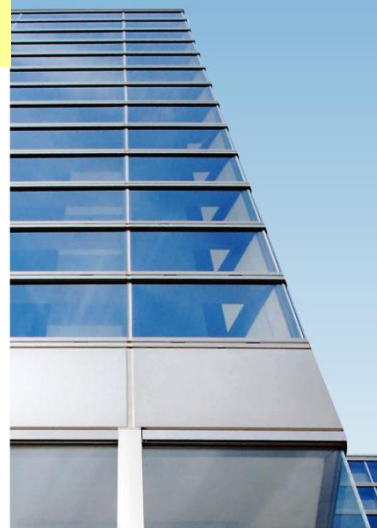
“Coding Mechanisms in Color Vision”

<http://www.eiiris.tut.ac.jp>

【内容】

Coding of color in the retina and lateral geniculate nucleus is dominated by cone-opponency, and color selectivities cluster around the corresponding color space axes. In the visual cortex, a more distributed representation for color stimuli is found. We investigated the emergence and consequences of such a population code for the encoding and processing of color. Using statistical models applied to natural chromatic signals, we found that a population code with distributed selectivities for color may arise from efficient encoding of center-surround filtered cone signals in ON and OFF retinal pathways. Quantitative measurements of color induction yielded effects of lateral interactions that resemble those found in the processing of orientation, and that can be explained by response modulations in a population code. Our results indicate that, going from a precortical encoding based on few cone opponency axes to a distributed population code in the cortex, the visual system may achieve a representation to efficiently implement lateral interactions for important tasks like color constancy.

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