公募シンポジウム7　H会場 ■ Symposium 7　Hall H

大会第1日：3月28日 (火)・March 28 (Tue)　9:50 - 11:50

【新学術「先端バイオイメージング支援プラットフォーム」共催】
非侵襲ヒト生体光イメージング：解剖・生理学研究の革新的ツール

【Co-sponsored by the MEXT "Advanced bioimaging support"】

Non-invasive human optical imaging:
innovative tools for investigating anatomy and physiology

オーガナイザー・Organizer：
星 詳子 (浜松医科大学光先端医学教育研究センター 生体医用光学研究室)
Yoko Hoshi (Dept Biomedical Optics, Hamamatsu Univ Sch Med)

1S07H1-1　**時間領域拡散蛍光トモグラフィによる生体組織深部蛍光ターゲットの定量イメージング**

○西村 吾朗
北海道大学・電子研

Time-domain fluorescence diffuse optical tomography for quantitative imaging of a fluorescence target in deep biological tissue

Goro Nishimura
RIES, Hokkaido Univ, Japan

1S07H1-2　**マイクロコンベックスプローブを用いた非侵襲光音響イメージング**

○大川 晋平[1]，精 きぐな[2]，新地 祐介[3]，中村 亜希子[1]，平沢 壮[1]，津田 均[4]，和田 隆亜[5]，堀口 明男[3]，櫛引 俊宏[1]，笹 秀典[2]，古谷 健一[2]，淺野 友彦[3]，石原 美弥[1]
[1]防衛医大・医用工学，[2]防衛医大・産科婦人科，[3]防衛医大・泌尿器科，[4]防衛医大・病態病理科，[5]富士フィルム・R&D統括本部

Noninvasive photoacoustic imaging using microconvex probe

Shinpei Okawa[1], Kiguna Sei[2], Masayuki Shinchi[3], Akiko Nakamura[1], Takeshi Hirasawa[1], Hitoshi Tsuda[4], Takatsugu Wada[5], Akio Horiguchi[3], Toshihiro Kushibiki[1], Hidenori Sasa[2], Kenichi Furuya[2], Tomohiko Asano[3], Miya Ishihara[1]
[1]Dept Med Eng, Natl Def Med Col, Saitama, Japan, [2]Dept Obst Gynec, Natl Def Med Col, Saitama, Japan, [3]Dept Urol, Natl Def Med Col, Saitama, Japan, [4]Dept Basic Pathol, Natl Def Med Col, Saitama, Japan, [5]R&D HQ, Fuji Film, Kanagawa, Japan

1S07H1-3　**階層ベイズ推定法を用いた連続光拡散光トモグラフィの逆問題解法**

○下川 丈明
ATR・脳情報解析研

Hierarchical Bayesian inversion algorithms for continuous-wave diffuse optical tomography

Takeaki Shimokawa
ATR-NIA, Kyoto, Japan

1S07H1-4　**輻射輸送方程式に基づくタイムドメイン拡散光トモグラフィ**

○星 詳子
浜松医科大・生体医用光学

Time-domain diffuse optical tomography based on the radiative transfer equation

Yoko Hoshi
Dept Biomedical Optics, Hamamatsu Univ Sch Med, Hamamatsu, Japan

Aims & Scope

The advent of recent sophisticated optical techniques, such as optogenetics and two-photon microscopy, has been contributing to elucidation of structures and functions at the microscopic level in mammals. These techniques are exclusively applied to studies in small animals, cultured tissues and cells. This is partly due to limited penetration depth of light. In contrast, optical imaging techniques using near-infrared light, which relatively easily penetrates biological tissues, are potentially effective for investigating human anatomy and physiology. Using scattered lights, diffuse optical tomography (DOT) reconstructs images of absorption and scattering coefficients, which provide information about hemodynamics and structures. The DOT image reconstruction can be approximately divided into two kinds: one is a linearization approach (linear DOT) and another is a nonlinear iterative approach (nonlinear iterative DOT). DOT can be extended to fluorescence tomography (FDOT), which enables molecular imaging in human. Photoacoustic imaging (PAI) is based on the PA effect, the generation of acoustic waves by the absorption of optical waves. In this symposium, the four above-mentioned imaging modalities are presented, and their potential as a tool for investigating human anatomy and physiology is discussed.

企画シンポジウム７　B会場 ■ Planned Symposium 7　Hall B

大会第2日：3月29日(水)・March 29 (Wed)　13:30 - 15:30

【新学術「オシロロジー」共催】
パーキンソン病の生理と臨床

【Co-sponsored by the MEXT "Oscillology"】

Parkinson's disease: from basic neuroscience to clinical application

オーガナイザー・Organizer：
美馬 達哉(立命館大学大学院 先端総合学術研究科)
Tatsuya Mima (The Graduate School of Core Ethics and Frontier Sciences, Ritsumeikan University)

南部 篤(生理学研究所 生体システム研究部門)
Atsushi Nambu (Natl Inst Physiol Sci)

2PS07B2-1 GABA interneurons generate oscillations in the dopamine-depleted striatum

Constance Hammond
INMED, INSERM, Marseille, France

2PS07B2-2 中脳ドーパミン神経シグナルの多様性

○松本 正幸
筑波大・医学医療・認知行動神経

Multiple signals transmitted by midbrain dopamine neurons

Masayuki Matsumoto
Lab Cogn & Behav Neurosci, Fac Med, Univ Tsukuba, Japan

2PS07B2-3 D1ドーパミン受容体を介する神経伝達は運動情報の伝達と運動の発現に不可欠である

○笹岡 俊邦[1,2,3], 佐藤 朝子[2,3], 知見 聡美[4], 大久保 直[3], 前島 純[3], 新井 慧[3], 砂山 智子[2,5], 小田 佳奈子[1], 酒井 清子[1], 前田 宜俊[1], 神保 幸弘[1], 中尾 聡宏[1], 佐藤 俊哉[1,3], 藤澤 信義[1], 南部 篤[4]
[1]新潟大・脳研, [2]基生研, [3]北里大・医, [4]生理研, [5]東大院

Dopamine D1 receptor-mediated transmission maintains information flow through the cortico-striato-entopeduncular direct pathway to release movements

Toshikuni Sasaoka[1,2,3], Asako Sato[2,3], Satomi Chiken[4], Tadashi Okubo[3], Jun Maeshima[3], Satoshi Arai[3], Tomoko Sunayama[2,5], Kanako Oda[1], Seiko Sakai[1], Yoshitaka Maeda[1], Yukihiro Jinbo[1], Satohiro Nakao[1], Toshiya Sato[1,3], Nobuyoshi Fujisawa[1], Atsushi Nambu[4]
[1]Brain Res Inst Niigata Univ, Niigata, [2]Natl Inst Basic Biol, [3]KItasato Univ Sch Med, [4]Natl Inst Physiol Sci, [5]Grad Sch Art Sci, Univ Tokyo, Japan

2PS07B2-4 ジストニアにおける視床運動核の神経振動

○村瀬 永子[1], 松橋 眞生[2], 前田 裕仁[3], 平林 秀裕[4]
[1]京都医療センター・神経内科, [2]京都大学・教育研究推進センター, [3]神戸大学・災害・救急医学分野, [4]奈良医療センター・脳神経外科

Oscillatory neurons of the motor thalamus in dystonia

Nagako Murase[1], Masao Matsuhashi[2], Yuji Maeda[3], Hidehiro Hirabayashi[4]
[1]Dept Neurol, NHO Kyoto medical Center, Kyoto, Japan, [2]Research and Educational Unit of Leaders for Integrated Medical System, Kyoto Univ, Kyoto, Japan, [3]Dept Emergency and Critical Care Medicine, Kobe Univ Grad Sch Med, Kobe, Japan, [4]Dept Neurosurgery, National Hospital Organization Nara Medical Center, Nara, Japan

Aims & Scope

Since the introduction of the "direct and indirect pathways model" of the basal ganglia in early 1990s, there has been tremendous progress in understanding the normal functions of the basal ganglia and pathophysiology of movement disorders. The basic knowledge has helped new development of the therapy of basal ganglia disorders, such as Parkinson's disease and dystonia. In the present symposium, we will invite basic and clinical neuroscientists, summarize recent progress of the basal ganglia functions, including the dopamine and higher brain functions, and discuss future therapeutic strategies for basal ganglia disorders.

企画シンポジウム９　H会場 ■ Planned Symposium 9　Hall H

大会第2日：3月29日 (水)・March 29 (Wed)　13:30 - 15:30

【文部科学省 先端研究基盤共用促進事業 原子・分子の顕微イメージングプラットフォーム共催】
マスイメージング技術講習会

【Co-sponsored by the MEXT National Program for Advanced Research Platforms "Imaging Platform"】

Mass imaging technical workshop

オーガナイザー・Organizer：
瀬藤 光利（浜松医科大学国際マスイメージングセンター）
Mitsutoshi Setou (Intl Mass Imaging Ctr, Hamamatsu Univ Sch Med)
山崎 文義（浜松医科大学国際マスイメージングセンター）
Fumiyoshi Yamazaki (Intl Mass Imaging Ctr, Hamamatsu Univ Sch Med)

2PS09H2-1 Improvements in MALDI imaging used to drive new frontiers of biological hypothesis testing

◯マイケル イースターリング
ブルカー・ダルトニクス株式会社

Improvements in MALDI imaging used to drive new frontiers of biological hypothesis testing

Easterling L Michael
Bruker Daltonics, Inc., MA, USA

2PS09H2-2 Rapid matrix-free molecular imaging of drugs and metabolites in tissues using desorption electrospray ionization (DESI) mass spectrometry

◯パクストン タナイ，佐藤 太，寺崎 真樹
日本ウオーターズ

Rapid matrix-free molecular imaging of drugs and metabolites in tissues using desorption electrospray ionization (DESI) mass spectrometry

Thanai Paxton, Futoshi Sato, Maki Terasaki
Analytical and Measuring Instruments Division, Nihon Waters K.K., Tokyo, Japan

2PS09H2-3 高空間分解能を実現するイメージング質量顕微鏡

◯緒方 是嗣
島津製作所

Imaging mass microscopy for high special resolution analysis

Koretsugu Ogata
Analytical & Measuring Instruments Division, Shimadzu Corporation, Kyoto, Japan

2PS09H2-4 ライフサイエンス分野におけるラベルフリーラマンイメージングついて

◯中野 辰彦，にしかわ のりあき，でみず ひろし，ジェニファー ラミレス
サーモフィッシャーサイエンティフィック株式会社

Label-free raman imaging for life science application

Tatsuhiko Nakano, Noriaki Nishikawa, Hiroshi Demizu, Ramirez Jennifer
Thermo Fisher Scientific

2PS09H2-5 質量顕微鏡法による腹部大動脈瘤壁の解析

○田中 宏樹[1]，財満 信宏[2]，海野 直樹[3]，浦野 哲盟[1]，瀬藤 光利[4]

[1]浜松医科大学・医生理学，[2]近畿大学農学部応用生命化学，[3]浜松医科大学・血管外科，[4]浜松医科大学・細胞分子解剖学

Imaging mass spectrometry reveals a novel mechanism of abdominal aortic aneurysm development

Hiroki Tanaka[1], Nobuhiro Zaima[2], Naoki Unno[3], Tetsumei Urano[1], Mitsutoshi Setou[4]

[1]Dept Med Physiol, Hamamatsu Univ Sch Med, Hamamatsu, Japan, [2]Dept Applied Biol Chem, Grad Sch Agriculture, Kindai Univ, [3]Div Vascular Surgery, Hamamatsu Univ Sch Med, Hamamatsu, Japan, [4]Dept Cell Mol Anat, Hamamatsu Univ Sch Med, Hamamatsu, Japan

2PS09H2-6 TOF-SIMSを用いた細胞内脂肪酸分布のイメージング

○堀川 誠[1,2]

[1]浜松医科大・解剖学，[2]国際マスイメージングセンター

Intracellular imaging of fatty acids by using time-of-flight secondary ion mass spectrometry

Makoto Horikawa[1,2]

[1]Dept Cell Mol Anat, Hamamatsu Univ Sch Med, Hamamatsu, Japan, [2]International Mass Imaging Center, Hamamatsu Univ Sch Med, Hamamatsu, Japan

Aims & Scope

This symposium is a joint symposium by Physiological Society of Japan and MEXT National Program for Advanced Research Platforms "Imaging Platform". Imaging Platform is comprised of Hakkaido University, Hamamatsu University of Medicine and Hiroshima University, which have a wide variety of advanced imaging analysis equipment in various fields of study such as biochemistry, material, environment, energy, and universe. In this symposium recent findings and technology of imaging mass spectrometry, which is a core technology in Hamamatsu University of Medicine International Mass Imaging Center in Imaging Platform, will be presented. We aim to develop human resources and imaging techniques through acquiring a new technique, information sharing and discussion among user, researcher, student and engineer in academic and industries.

企画シンポジウム10　B会場 ■ Planned Symposium 10　Hall B

大会第2日：3月29日(水)・March 29 (Wed)　16:50 - 18:50

【新学術「先端バイオイメージング支援プラットフォーム」共催】
光バイオイメージングによる多階層的生理研究

【Co-sponsored by the MEXT "Advanced bioimaging support"】

Optical bio-imaging to visualize the hierarchical physiology

オーガナイザー・Organizer：
瀬藤 光利（浜松医科大学 細胞分子解剖学講座）
Mitsutoshi Setou (Dept Cell Biol Anat, Hamamatsu Univ Sch Med)

和氣 弘明（神戸大学大学院医学研究科 システム生理学分野）
Hiroaki Wake (Div System Neurosci, Kobe Univ Grad Sch Med)

2PS10B3-1　**中枢神経系免疫システムの可視化**

○和氣 弘明[1,2,3]
[1]神戸大・院医・システム生理，[2]自然科学研究機構 生理学研究所，[3]さきがけ、科学技術振興機構

Visualization of immune system in brain

Hiroaki Wake[1,2,3]
[1]Dept Neurophysiol, Grad Sch Med, Univ Kobe, JAPAN, [2]Dept Homeostatic development, NIPS, NINS, JAPAN, [3]PRESTO, JST

2PS10B3-2　**超解像イメージングによるシナプス伝達制御機構の解析**

○矢尾 育子
浜松医大・光イメージング

Super resolution imaging of synaptic site to analyze the transmission regulation

Ikuko Yao
Dept Optical Imaging, Hamamatsu Univ Sch Med, Hamamatsu, Japan

2PS10B3-3　**マスイメージングにより明らかになった翻訳後修飾変異マウス脳における神経伝達物質の変化**

○瀬藤 光利[1,2]
[1]浜松医大・分子解剖，[2]国際マスイメージングセンター

Mass spectrometry imaging revealed the alteration of the neurotransmitters in brain tissue sections of post-translational modification mutant mouse

Mitsutoshi Setou[1,2]
[1]Dept Cell Biol Anat, Hamamatsu Univ Sch Med, Hamamatsu, Japan, [2]International Mass Imaging Center, Hamamatsu Univ Sch Med, Hamamatsu, Japan

2PS10B3-4　Cruising inside cells

○宮脇 敦史
理研BSI

Cruising inside cells

Atsushi Miyawaki
RIKEN BSI, Saitama, Japan

Aims & Scope

Research into physiological phenomena has taken a leap forward by recent advanced optical bio imaging techniques. Traditionally, physiological phenomena including cell division, cell function, molecular transport and cell death were detected by biochemical methods. However, this information lacked high resolution spatial or temporal information. Using recent bio imaging techniques, both spatial and temporal information can be integrated across the molecular, cellular and systems levels that allow us to further investigate the hierarchical interaction of organ systems. In this session, we will discuss the current and potential future state of imaging techniques, and will further discuss what information can be revealed by the visualization of single molecules, lipid to cell function, and system physiology.

公募シンポジウム28　C会場 ■ Symposium 28　Hall C

大会第2日：3月29日(水)・March 29 (Wed)　16:50 - 18:50

【新学術「温度生物学」共催】
温度生物学の視点から探る生理機能

【Co-sponsored by the MEXT "Thermal biology"】

Physiological functions in thermal biology

オーガナイザー・Organizer：
柴崎 貢志（群馬大学大学院医学系研究科 分子細胞生物学）
Koji Shibasaki (Dept Mol Cell Neurobiol, Gunma Univ Grad Sch Med)

岡部 弘基（東京大学大学院薬学系研究科 生体分析化学）
Kohki Okabe (Dept Bioanalytical Chem, Grad Sch Pharmac, Univ Tokyo)

2S28C3-1　脳内温度による神経活動の向上；温度センサー TRPV4の重要性

○柴崎 貢志
群馬大院・医・分子細胞

Enhancement of neuronal excitability by brain temperature and TRPV4

Koji Shibasaki
Dept Mol Cell Neurobiol, Gunma Univ Grad Sch Med, Maebashi, Japan

2S28C3-2　電位依存性プロトンチャネルの温度感受性ゲーティング

○藤原 祐一郎
阪大・院医・生理

Temperature-sensitive gating of voltage-gated H^+ channels

Yuichiro Fujiwara
Dept Physiol, Grad Sch Med, Osaka Univ, Suita, Japan

2S28C3-3　細胞内局所発熱による細胞機能発現

○岡部 弘基[1,2]
[1]東大・院薬・分析，[2]JST さきがけ

Investigation on cell functions mediated by intracellular local thermogenesis

Kohki Okabe[1,2]
[1]Dept Bioanalytical Chem, Grad Sch Pharmac, Univ Tokyo, Tokyo, Japan, [2]PRESTO, JST, Tokyo, Japan

2S28C3-4　Functional interaction between thermosensitive TRPV4 and TMEM16A/anoctamin 1 contributes to stimulated saliva and tear secretion

Sandra Derouiche[1], Yasunori Takayama[1], Masataka Murakami[2], Makoto Tominaga[1]
[1]Div Cell Signal, NIPS, Okazaki, Japan, [2]NIPS, Okazaki, Japan

Aims & Scope

Temperature affects various physiological functions and is one of the most important factors in homeostasis. Furthermore, temperature powerfully affects every biological process. Humans and many other mammals maintain their internal temperature as a stable level around 37°C, which appears to be optimal for their functioning as we reported. Recently, we demonstrated the first intracellular temperature mapping based on a fluorescent polymeric thermometer and fluorescence lifetime imaging microscopy. Nuclei and mitochondria showed significantly higher temperature than the cytoplasm. These results showed that our new intracellular thermometry could determine an intrinsic relationship between the temperature and organelle function. In this symposium, we invited the excellent speakers about the interaction between physiological functions of ion channels and temperature or measurement of intracellular temperature dynamics. We will introduce our new and valuable topics related to temperature and physiological functions, and would like to discuss the importance with audience. We invited an organizer from the biophysical society and a foreign speaker, and would like to have a diverse symposium focusing on the heterogeneity of the audience.

公募シンポジウム32　A会場 ■ Symposium 32　Hall A

大会第3日：3月30日(木)・March 30 (Thu)　8:50 - 10:50

【新学術「リポクオリティ」共催】
膜タンパク質―脂質相互作用への新たな挑戦：リポクオリティーによる膜タンパク質機能の制御

【Co-sponsored by the MEXT "Lipoquality"】

Lipoquality and functions of membrane proteins

オーガナイザー・Organizer：
岡村 康司（大阪大学大学院 医学系研究科）
Yasushi Okamura (Dept Physiol, Grad Sch Med, Osaka Univ)

有田 誠（理化学研究所 統合生命医科学研究センター）
Makoto Arita (RIKEN IMS)

3S32A1-1　脂肪酸クオリティの最先端リピドミクスと生理的意義の解明

○有田 誠[1,2,3]
[1]理研・IMS・メタボローム，[2]慶應大・薬・代謝生理化学，[3]横市大・院生命医

Advanced lipidomics to understand the quality difference of fatty acids in biological systems

Makoto Arita[1,2,3]
[1]RIKEN-IMS, Yokohama, Japan, [2]Keio Univ Faculty of Pharmacy, Tokyo, Japan, [3]Grad Sch Med Life Sci, Yokohama City Univ, Yokohama, Japan

3S32A1-2　電位依存性ホスファターゼの構造生物学的研究

○中川 敦史[1]，成田 宏隆[1]，神田 直樹[1]，川鍋 陽[2]，岡村 康司[2]
[1]阪大・蛋白研，[2]阪大・院医・統合生理

Structural studies of voltage-sensing phosphatase

Atsushi Nakagawa[1], Hirotaka Narita[1], Naoki Kanda[1], Akira Kawanabe[2], Yasushi Okamura[2]
[1]Inst Protein Res, Osaka Univ, Japan, [2]Dept Physiol, Grad Sch Med, Osaka Univ, Suita, Japan

3S32A1-3　電位依存性イオンチャネルの電位センサードメインへのリガンド結合による機能制御の構造メカニズム

○大澤 匡範
慶應義塾大・薬・生命機能物理学

Structural mechanism of functional regulation of the voltage-gated ion channels by ligand binding to voltage-sensing domain

Masanori Osawa
Div Physics for Life Functions, Facl Pharmacy, Keio Univ, Japan

3S32A1-4　The molecular mechanism of polyunsaturated fatty acids opening voltage-gated K channels

Fredrik Elinder
Dept Clin Exp Med, Linkoping Univ, Linkoping, Sweden

3S32A1-5 電位依存性ホスファターゼにおける膜相互作用の動態と役割

○岡村 康司[1]，川鍋 陽[1]，西澤 和久[2]，中川 敦史[3]，成田 宏隆[3]，坂田 宗平[4]，神野 有香[1]
[1]大阪大・院医・統合生理，[2]帝京大・医療技術・臨床検査，[3]大阪大・蛋白研・超分子構造解析，[4]大阪医大・医・生理

Mechanisms and roles of lipid interaction in voltage-sensing phosphatase

Yasushi Okamura[1], Akira Kawanabe[1], Kazuhisa Nishizawa[2], Atsushi Nakagawa[3], Hirotaka Narita[3], Souhei Sakata[4], Yuka Jinno[1]
[1]Dept Physiol, Grad Sch Med, Osaka Univ, Suita, Japan, [2]Dept Clinical Lab Sci, Teikyo Univ Sch Medical Technol, Tokyo, Japan, [3]Inst Protein Res, Osaka Univ, Suita, Japan, [4]Dept Physiol, Med, Osaka Medical College, Takatsuki, Japan

Aims & Scope

Lipids are essential components of biological membranes and regulate ion channels and receptors through forming environments and by direct association. Lipids also serve as important mediators of cell signaling in many biological or pathological events such as inflammation and synaptic plasticity. Recent progress of cryoelectron-microscopy and X-ray crystal structure analysis of ion channels has shown several examples where lipids are parts of complexes of membrane proteins serving as key substances for regulating protein functions, not just providing environment or supporting membrane proteins. In addition, recent progress of mass spectrometry has identified surprisingly large number of lipid molecules with diversities in the length of carbon chain of acyl-group. Understanding structural and chemical basis by which membrane proteins recognize such specific molecular details (so called “lipoquality”) for their functions is emerging to be important. In this symposium, we will have four speakers from cutting edge research of lipids and membrane proteins and will explore for future directions of “lipoquality”-based understandings of life.

企画シンポジウム13　B会場 ■ Planned Symposium 13　Hall B

大会第3日：3月30日(木)・March 30 (Thu)　8:50 - 10:50

【新学術「オシロロジー」共催】
非線形・振動現象の新展開

【Co-sponsored by the MEXT "Oscillology"】

Nonlinear and oscillatory phenomenon in neurophysiology

オーガナイザー・Organizer：
虫明 元（東北大学大学院 医学系研究科）
Hajime Mushiake (Dept Physiol, School of Medicine, Tohoku Univ)

森田 賢治（東京大学大学院教育学研究科 身体教育学コース）
Kenji Morita (Physical and Health Education, Grad Sch Edu, Univ Tokyo)

3PS13B1-1　神経系発振ステートを制御するアストロサイト活動の解明

○松井 広
東北大・院医・新医学領域創生

Glial regulation of neuronal oscillations

Ko Matsui
Div Interdisciplinary Med Sci, Grad Sch Med, Tohoku Univ, Sendai, Japan

3PS13B1-2　目的指向型行動における腹側線条体カルシウム振動の役割

○木村 生[1,2]，夏堀 晃世[3]，西田 洋司[1]，田中 謙二[1]
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The roles of ventral striatal Ca^{2+} oscillations in goal-directed behavior

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3PS13B1-3　神経細胞のResonance特性に関わるイオンチャネルの解析

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Ion channels for the resonant property of neurons

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3PS13B1-4　ラット大脳皮質における波状に伝播する内因性信号の観察

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Optical imaging of the intrinsic signal revealed a wave-like propagation of the infra-slow oscillation over the rat cortex

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3PS13B1-5　ヒト非線形神経振動の操作的研究

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Manipulative approaches to nonlinear neural oscillations in the human brain

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3PS13B1-6　ドーパミンと強化学習の動的平衡について

○森田 賢治
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Dopamine and dynamic equilibrium of reinforcement learning

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3PS13B1-7　サル運動野のLFPシータパワーの増加は運動の記憶を反映する

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Increased LFP θ power in primate motor areas reflects memorization of movement

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Aims & Scope

The network in the nervous system is full of nonlinearity, which gives rise to spatiotemporal pattern beyond the summation of its components, and oscillatory phenomena, which emerge from complex interaction among slow and fast frequency oscillations. To understand the physiological significance of nonlinearity and oscillations, we need integrative approach including experimental and theoretical approach at micro- and macro-scopic levels. In this symposium, we will introduce various approaches to understanding nonlinear and/or oscillatory phenomenon.