

The Journal of Neuroscience

October 31, 2007 • Volume 27 Number 44 www.jneurosci.org



Cover legend: Computation of higher-order binocular disparity. When our left and right eye view a three-dimensional scene, each eye receives a slightly different view of the world, owing to the spatial separation of the eyes in the head. These small differences in the images are called binocular disparity and are one source of information about the distance of objects from the observer. The way in which visual cortical neurons detect the binocular disparity of single visual features can be modeled with an energy computation: the behavior of this model has much in common with the complex-cell property discovered by Hubel and Wiesel in the primary visual cortex. Recently, new versions of the energy model have been used to detect higher-order properties, such as the relative disparity between two visual features, by acting on the outputs of two or more primary visual cortical neurons. The image illustrates the odd-symmetric interactions within an energy model. For more information, see the article by Roe et al. in this issue (pages 11820–11831).

i This Week in The Journal

Journal Club

- 11777 **Parkinson's Disease: Fighting the Will?**
Yael Niv and Michal Rivlin-Etzion
- 11780 **Pulse-Pattern Sensitivity in the Frontal Eye Field of the Macaque Monkey**
Pierre Pouget, Mathew J. Nelson, Jeremiah Y. Cohen, and Richard P. Heitz

Symposia and Mini-Symposia

- 11782 **Spinal Cord Injury: Time to Move?**
Serge Rossignol, Martin Schwab, Michal Schwartz, and Michael G. Fehlings
- 11793 **Modes of Vesicle Retrieval at Ribbon Synapses, Calyx-Type Synapses, and Small Central Synapses**
Ling-Gang Wu, Timothy A. Ryan, and Leon Lagnado
- 11803 **Neurobiology of Escalated Aggression and Violence**
Klaus A. Miczek, Rosa M. M. de Almeida, Edward A. Kravitz, Emilie F. Rissman, Sietse F. de Boer, and Adrian Raine
- 11807 **Neurotech for Neuroscience: Unifying Concepts, Organizing Principles, and Emerging Tools**
Rae Silver, Kwabena Boahen, Sten Grillner, Nancy Kopell, and Kathie L. Olsen
- 11820 **Disparity Channels in Early Vision**
Anna W. Roe, Andrew J. Parker, Richard T. Born, and Gregory C. DeAngelis
- 11832 **β -Amyloid Modulation of Synaptic Transmission and Plasticity**
Deepa V. Venkitaramani, Jeannie Chin, William J. Netzer, Gunnar K. Gouras, Sylvain Lesne, Roberto Malinow, and Paul J. Lombroso
- 11838 **The Upshot of Up States in the Neocortex: From Slow Oscillations to Memory Formation**
Kari L. Hoffman, Francesco P. Battaglia, Kenneth Harris, Jason N. MacLean, Lisa Marshall, and Mayank R. Mehta
- 11842 **Biomimetic Brain Machine Interfaces for the Control of Movement**
Andrew H. Fagg, Nicholas G. Hatsopoulos, Victor de Lafuente, Karen A. Moxon, Shamim Nemati, James M. Rebesco, Ranulfo Romo, Sara A. Solla, Jake Reimer, Dennis Tkach, Eric A. Pohlmeier, and Lee E. Miller
- 11847 **Transcriptional Regulation of Cortical Interneuron Development**
Simon J. B. Butt, Inma Cobos, Jeffrey Golden, Nicoletta Kassaris, Vassilis Pachnis, and Stewart Anderson

- 11851 **Stress and Disease: Is Being Female a Predisposing Factor?**
Jill B. Becker, Lisa M. Monteggia, Tara S. Perrot-Sinal, Russell D. Romeo, Jane R. Taylor, Rachel Yehuda, and Tracy L. Bale
- 11856 **Noncoding RNAs in the Brain**
John S. Satterlee, Scott Barbee, Peng Jin, Anna Krichevsky, Sofie Salama, Gerhard Schratt, and Da-Yu Wu
- 11860 **Converging Evidence for a Fronto-Basal-Ganglia Network for Inhibitory Control of Action and Cognition**
Adam R. Aron, Sarah Durston, Dawn M. Eagle, Gordon D. Logan, Cathy M. Stinear, and Veit Stuphorn
- 11865 **The Roles of Kinases in Familial Parkinson's Disease**
Mark R. Cookson, William Dauer, Ted Dawson, Edward A. Fon, Ming Guo, and Jie Shen

Brief Communications

- 11934 **Opioid-Mediated Placebo Responses Boost Pain Endurance and Physical Performance: Is It Doping in Sport Competitions?**
Fabrizio Benedetti, Antonella Pollo, and Luana Colloca
- 11986 **Different Effects of Voluntary and Involuntary Attention on EEG Activity in the Gamma Band**
Ayelet N. Landau, Michael Esterman, Lynn C. Robertson, Shlomo Bentin, and William Prinzmetal
- 12007 **Fructose-1,6-Bisphosphate Has Anticonvulsant Activity in Models of Acute Seizures in Adult Rats**
Xiao-Yuan Lian, Firdous A. Khan, and Janet L. Stringer

Articles

CELLULAR/MOLECULAR

- 11978 **The Structural and Functional Differentiation of Hair Cells in a Lizard's Basilar Papilla Suggests an Operational Principle of Amniote Cochleas**
M. Eugenia Chiappe, Andrei S. Kozlov, and A. J. Hudspeth
- 12033 **The *FGF14*^{E145S} Mutation Disrupts the Interaction of FGF14 with Voltage-Gated Na⁺ Channels and Impairs Neuronal Excitability**
Fernanda Laezza, Benjamin R. Gerber, Jun-Yang Lou, Marie A. Kozel, Hali Hartman, Ann Marie Craig, David M. Ornitz, and Jeanne M. Nerbonne
- 12067 **Neurokinin-1 Receptor Enhances TRPV1 Activity in Primary Sensory Neurons via PKC ϵ : A Novel Pathway for Heat Hyperalgesia**
Hua Zhang, Chun-Lei Cang, Yasuhiko Kawasaki, Ling-Li Liang, Yu-Qiu Zhang, Ru-Rong Ji, and Zhi-Qi Zhao

DEVELOPMENT/PLASTICITY/REPAIR

- 11940 **Changes of the EPSP Waveform Regulate the Temporal Window for Spike-Timing-Dependent Plasticity**
Marco Fuenzalida, David Fernandez de Sevilla, and Washington Buño
- 11991 ***In Vivo* Tracing of Neural Tracts in the Intact and Injured Spinal Cord of Marmosets by Diffusion Tensor Tractography**
Kanehiro Fujiyoshi, Masayuki Yamada, Masaya Nakamura, Junichi Yamane, Hiroyuki Katoh, Kazuya Kitamura, Kenji Kawai, Seiji Okada, Suketaka Momoshima, Yoshiaki Toyama, and Hideyuki Okano

- 12012 **Paucity of Pericytes in Germinal Matrix Vasculature of Premature Infants**
Alex Braun, Hongmin Xu, Furong Hu, Praneeth Kocherlakota, Donald Siegel, Praveen Chander, Zoltan Ungvari, Anna Csiszar, Maiken Nedergaard, and Praveen Ballabh
- 12025 **Synaptic Plasticity (and the Lack Thereof) in Hippocampal CA2 Neurons**
Meilan Zhao, Yun-Sik Choi, Karl Obrietan, and Serena M. Dudek
- 12058 **Differential Modulation of Motor Cortical Plasticity and Excitability in Early and Late Phases of Human Motor Learning**
Karin Rosenkranz, Aleksandra Kacar, and John C. Rothwell
- 12096 **Regulation of Long-Term Depression and Climbing Fiber Territory by Glutamate Receptor $\delta 2$ at Parallel Fiber Synapses through its C-Terminal Domain in Cerebellar Purkinje Cells**
Takeshi Uemura, Sho Kakizawa, Miwako Yamasaki, Kenji Sakimura, Masahiko Watanabe, Masamitsu Iino, and Masayoshi Mishina

BEHAVIORAL/SYSTEMS/COGNITIVE

- 11877 **Parieto-Frontal Connectivity during Visually Guided Grasping**
Meike J. Grol, Jasminka Majdandžić, Klaas E. Stephan, Lennart Verhagen, H. Chris Dijkerman, Harold Bekkering, Frans A. J. Verstraten, and Ivan Toni
- 11888 **Dissociable Performance on Scene Learning and Strategy Implementation after Lesions to Magnocellular Mediodorsal Thalamic Nucleus**
Anna S. Mitchell, Mark G. Baxter, and David Gaffan
- 11896 **Topographic Organization in and near Human Visual Area V4**
Kathleen A. Hansen, Kendrick N. Kay, and Jack L. Gallant
- 11912 **Evidence Accumulation and the Moment of Recognition: Dissociating Perceptual Recognition Processes Using fMRI**
Elisabeth J. Ploran, Steven M. Nelson, Katerina Velanova, David I. Donaldson, Steven E. Petersen, and Mark E. Wheeler
- 11949 **Medial Prefrontal Theta Bursts Precede Rapid Motor Responses during Visual Selective Attention**
Arnaud Delorme, Marissa Westerfield, and Scott Makeig
- 11966 **Processing of Odor Mixtures in the *Drosophila* Antennal Lobe Reveals both Global Inhibition and Glomerulus-Specific Interactions**
Ana F. Silbering and C. Giovanni Galizia
- 11999 **Cortical Acetylcholine Release Is Lateralized during Asymmetrical Slow-Wave Sleep in Northern Fur Seals**
Jennifer L. Lapierre, Peter O. Kosenko, Oleg I. Lyamin, Tohru Kodama, Lev M. Mukhametov, and Jerome M. Siegel
- 12045 **Steroid Hormones Act Transsynaptically within the Forebrain to Regulate Neuronal Phenotype and Song Stereotypy**
John Meitzen, Ignacio T. Moore, Karin Lent, Eliot A. Brenowitz, and David J. Perkel
- 12078 **Gastrin-Releasing Peptide Mediates Light-Like Resetting of the Suprachiasmatic Nucleus Circadian Pacemaker through cAMP Response Element-Binding Protein and *Per1* Activation**
Karen L. Gamble, Gregg C. Allen, Tongrong Zhou, and Douglas G. McMahon
- 12088 **The Role of Kisspeptin–GPR54 Signaling in the Tonic Regulation and Surge Release of Gonadotropin-Releasing Hormone/Luteinizing Hormone**
Heather M. Dungan, Michelle L. Gottsch, Hongkui Zeng, Alexander Gragerov, John E. Bergmann, Demetrios K. Vassilatis, Donald K. Clifton, and Robert A. Steiner

12109 **Cognitive Signals in the Primate Motor Thalamus Predict Saccade Timing**
Masaki Tanaka

NEUROBIOLOGY OF DISEASE

11869 **Diffusion Tensor Imaging Reliably Detects Experimental Traumatic Axonal Injury and Indicates Approximate Time of Injury**

Christine L. Mac Donald, Krikor Dikranian, Philip Bayly, David Holtzman, and David Brody

11925 **Neural Stem Cells Improve Memory in an Inducible Mouse Model of Neuronal Loss**

Tritia R. Yamasaki, Mathew Blurton-Jones, Debbi A. Morrisette, Masashi Kitazawa, Salvatore Oddo, and Frank M. LaFerla

11960 **More Is Not Always Better: Increased Fractional Anisotropy of Superior Longitudinal Fasciculus Associated with Poor Visuospatial Abilities in Williams Syndrome**

Fumiko Hoeft, Naama Barnea-Goraly, Brian W. Haas, Golijeh Golarai, Derek Ng, Debra Mills, Julie Korenberg, Ursula Bellugi, Albert Galaburda, and Allan L. Reiss

Persons interested in becoming members of the Society for Neuroscience should contact the Membership Department, Society for Neuroscience, 1121 14th St., NW, Suite 1010, Washington, DC 20005, phone 202-962-4000.

Instructions for Authors are available at <http://www.jneurosci.org/misc/itoa.shtml>. Authors should refer to these Instructions online for recent changes that are made periodically.

Brief Communications Instructions for Authors are available via Internet (http://www.jneurosci.org/misc/ifa_bc.shtml).

Submissions should be submitted online using the following url: <http://sfn.manuscriptcentral.com>. Please contact the Central Office, via phone, fax, or e-mail with any questions. Our contact information is as follows: phone, 202-962-4000; fax, 202-962-4945; e-mail, jn@sfn.org.