Centre National de la Recherche Scientifique

Liste complète des publications

Laurent Perrinet

Pour évaluation par les sections du Comité national

Équipe NEural OPerations in TOpographies (NeOpTo)
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1 Articles de revues en cours de révision

A46 Victor Boutin, Angelo Franciosini, Franck Ruffier et Laurent U Perrinet. « Top-down feedback in Hierarchical Sparse Coding ». In : *Submitted* (20 fév. 2019)

A45 Victor Boutin, Angelo Franciosini, Frédéric Y Chavane, Franck Ruffier et Laurent U Perrinet. « Sparse Deep Predictive Coding captures contour integration capabilities of the early visual system ». In : *Submitted* (20 fév. 2019). URL : https://arxiv.org/abs/1902.07651

A44 Emmanuel Daucé, Pierre Albigès et Laurent U Perrinet. « A dual foveal-peripheral visual processing model implements efficient saccade selection ». In : *Submitted* (5 août 2019). DOI : 10.1101/725879

A43 Chloé Pasturel, Anna Montagnini et Laurent U Perrinet. « Humans adapt their anticipatory eye movements to the volatility of visual motion properties ». In : *Submitted* (26 sept. 2019). DOI : 10.1101/784116. URL : https://www.biorxiv.org/content/10.1101/784116v1

2 Articles de revues internationales à comité de lecture

2019

A42 Laurent U Perrinet. « An adaptive homeostatic algorithm for the unsupervised learning of visual features ». In : *Vision* 3.3 (sept. 2019), p. 47. DOI : 10.3390/vision3030047. URL : https://spikeai.github.io/HULK/

A41 Cesar U Ravello, Laurent U Perrinet, Maria-José Escobar et Adrián G Palacios. « Speed-Selectivity in Retinal Ganglion Cells is Sharpened by Broad Spatial Frequency, Naturalistic Stimuli ». In : *Scientific Reports* 9.1 (24 jan. 2019). DOI : 10.1038/s41598-018-36861-8. URL : https://doi.org/10.1038%2Fs41598-018-36861-8

A40 Sandrine Chemla, Alexandre Reynaud, Matteo diVolo, Yann Zerlaut, Laurent U Perrinet, Alain Destexhe et Frédéric Y Chavane. « Suppressive waves disambiguate the representation of long-range apparent motion in awake monkey V1 ». In : *Journal of Neuroscience* 2792 (18 mar. 2019), p. 18. DOI : 10.1523/JNEUROSCI.2792-18.2019. URL : http://www.jneurosci.org/content/early/2019/03/18/JNEUROSCI.2792-18.2019 (visité le 27/07/2018)

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A39 Jean-Bernard Damasse, Laurent U Perrinet, Laurent Madelain et Anna Montagnini. « Reinforcement effects in anticipatory smooth eye movements ». In : *Journal of Vision* 18.11 (1er oct. 2018), p. 14-14. ISSN : 1534-7362. DOI : 10.1167/18.11.14. URL : https://jov.arvojournals.org/article.aspx?articleid=2707670 (visité le 22/10/2018)

A38 Jonathan Vacher, Andrew Isaac Meso, Laurent U Perrinet et Gabriel Peyré. « Bayesian Modeling of Motion Perception using Dynamical Stochastic Textures ». In : *Neural Computation* (21 nov. 2018). DOI : 10.1162/neco_a_01142. URL : https://www.mitpressjournals.org/doi/abs/10.1162/neco_a_01142

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A37 Mina A Khoei, Guillaume S Masson et Laurent U Perrinet. « The flash-lag effect as a motion-based predictive shift ». In : *PLoS Computational Biology* 13.1 (26 jan. 2017), e1005068. DOI : 10.1371/journal.pcbi.

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A36 Jens KREMKOW, Laurent U PERRINET, Cyril MONIER, Jose-Manuel ALONSO, Ad M AERTSEN, Yves FRÉGNAC et Guillaume S MASSON. « Push-Pull Receptive Field Organization and Synaptic Depression : Mechanisms for Reliably Encoding Naturalistic Stimuli in V1 ». In : *Frontiers in Neural Circuits* 10 (2016). ISSN : 1662-5110. DOI : 10.3389/fncir.2016.00037. URL : http://journal.frontiersin.org/article/10.3389/fncir.2016.00037/full

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A36 Wahiba TAOUALI, Giacomo BENVENUTI, Pascal WALLISCH, Frédéric Y CHAVANE et Laurent U PERRINET. « Testing the odds of inherent vs. observed overdispersion in neural spike counts ». In : *Journal of Neurophysiology* 115.1 (22 jan. 2016), p. 434-444. ISSN : 1522-1598. DOI : 10.1152/jn.00194.2015. URL : http://www.ncbi.nlm.nih.gov/pubmed/26445864

A35 Jonathan VACHER, Andrew Isaac MESO, Laurent U PERRINET et Gabriel PEYRÉ. « Biologically Inspired Dynamic Textures for Probing Motion Perception ». In : *Advances in Neural Information Processing Systems* 28 (2015), p. 1918-1926. URL : http://papers.nips.cc/paper/5769-biologically-inspired-dynamic-textures-for-probing-motion-perception.pdf

A34 Laurent U PERRINET et James A BEDNAR. « Edge co-occurrences can account for rapid categorization of natural versus animal images ». In : *Scientific Reports* 5 (2015), p. 11400. DOI : 10.1038/srep11400. URL : http://www.nature.com/articles/srep11400

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A33 Laurent U PERRINET, Rick A. ADAMS et Karl J FRISTON. « Active inference, eye movements and oculomotor delays ». In : *Biological Cybernetics* 108.6 (16 déc. 2014), p. 777-801. ISSN : 1432-0770. DOI : 10.1007/s00422-014-0620-8. URL : http://link.springer.com/article/10.1007%2Fs00422-014-0620-8

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A32 Mina A KHOEI, Guillaume S MASSON et Laurent U PERRINET. « Motion-based prediction explains the role of tracking in motion extrapolation ». In : *Journal of Physiology-Paris* 107.5 (nov. 2013), p. 409-420. ISSN : 0928-4257. DOI : 10.1016/j.jphysparis.2013.08.001. URL : http://www.citeulike.org/user/LaurentPerrinet/article/12281049

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A30 Rodrigo NAVA, J Victor MARCOS, Boris ESCALANTE-RAMIREZ, Gabriel CRISTÓBAL, Laurent U PERRINET et Raúl S J ESTÉPAR. « Advances in Texture Analysis for Emphysema Classification ». In : *Lecture Notes in Computer Science* 8259 (2013). Sous la dir. de David HUTCHISON et al., p. 214-221. ISSN : 1611-3349. DOI : 10.1007/978-3-642-41827-3_27. URL : http://dx.doi.org/10.1007/978-3-642-41827-3_27

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A29 Claudio SIMONCINI, Laurent U PERRINET, Anna MONTAGNINI, Pascal MAMASSIAN et Guillaume S MASSON. « More is not always better : dissociation between perception and action explained by adaptive gain control ».

In : *Nature Neuroscience* (2012). DOI : 10.1038/nn.3229. URL : http://www.nature.com/neuro/journal/vaop/ncurrent/full/nn.3229.html

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A23 Nicole VOGES et Laurent U PERRINET. « Complex dynamics in recurrent cortical networks based on spatially realistic connectivities ». In : *Frontiers in Computational Neuroscience* 6 (2012). ISSN : 1662-5188. DOI : 10.3389/fncom.2012.00041. URL : https://laurentperrinet.github.io/publication/voges-12

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A18 Nicole Voges et Laurent U Perrinet. « Phase space analysis of networks based on biologically realistic parameters ». In : *Journal of Physiology-Paris* 104.1-2 (10 nov. 2010), p. 51-60. ISSN : 1769-7115. DOI : 10.1016/j.jphysparis.2009.11.004. URL : http://dx.doi.org/10.1016/j.jphysparis.2009.11.004

A17 Jens Kremkow, Laurent U Perrinet, Guillaume S Masson et Ad M Aertsen. « Functional consequences of correlated excitatory and inhibitory conductances in cortical networks ». In : *Journal of Computational Neuroscience* 28.3 (juin 2010), p. 579-94. DOI : 10.1007/s10827-010-0240-9. URL : http://www.ncbi.nlm.nih.gov/pubmed/20490645

A16 Khaled Masmoudi, Marc Antonini, Pierre Kornprobst, Laurent U Perrinet A novel bio-inspired static image compression scheme for noisy data transmission over low-bandwidth channels. *Acoustics Speech and Signal Processing (ICASSP)*, 2010.

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A15 Andrew P Davison, Daniel Bruderle, Jochen Eppler, Jens Kremkow, Eilif Muller, Dejan Pecevski, Laurent U Perrinet et Pierre Yger. « PyNN : A Common Interface for Neuronal Network Simulators ». In : *Frontiers in Neuroinformatics* 2 (2008), p. 11. ISSN : 16625196. DOI : 10.3389/neuro.11.011.2008. URL : http://dx.doi.org/10.3389/neuro.11.011.2008

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A13 Frédéric V. Barthélemy, Laurent U Perrinet, Eric Castet et Guillaume S Masson. « Dynamics of distributed 1D and 2D motion representations for short-latency ocular following ». In : *Vision research* 48.4 (fév. 2008), p. 501-522. ISSN : 0042-6989. DOI : 10.1016/j.visres.2007.10.020. URL : http://dx.doi.org/10.1016/j.visres.2007.10.020

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A12 Sylvain Fischer, Filip Šroubek, Laurent U Perrinet, Rafael Redondo et Gabriel Cristóbal. « Self-Invertible 2D Log-Gabor Wavelets ». In : *International Journal of Computer Vision* 75.2 (13 jan. 2007), p. 231-246. ISSN : 1573-1405. DOI : 10.1007/s11263-006-0026-8. URL : http://dx.doi.org/10.1007/s11263-006-0026-8

A11 Sylvain Fischer, Rafael Redondo, Laurent U Perrinet et Gabriel Cristóbal. « Sparse Approximation of Images Inspired from the Functional Architecture of the Primary Visual Areas ». In : *EURASIP Journal on Advances in Signal Processing* 2007.1 (2007), p. 090727-122. ISSN : 1687-6180. DOI : 10.1155/2007/90727. URL : http://dx.doi.org/10.1155/2007/90727

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A9 Laurent U Perrinet et Guillaume S Masson. « Modeling spatial integration in the ocular following response using a probabilistic framework ».

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A3 Laurent U PERRINET, Arnaud DELORME, Simon J THORPE et Manuel SAMUELIDES. « Network of integrate-and-fire neurons using Rank Order Coding A : how to implement spike timing dependant plasticity ». In : *Neurocomputing* 38–40.1–4 (2001), p. 817-22. DOI : 10.1016/S0925-2312(01)00460-X

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3 Chapitres d'ouvrage à comité de lecture

B6 Laurent U Perrinet. « From the retina to action : Dynamics of predictive processing in the visual system ». In : *The Philosophy and Science of Predictive Processing*. Sous la dir. de Steven S. Gouveia. in press. Bloomsbury, 2019. URL : https://laurentperrinet.github.io/publication/perrinet-19/

B5 Anna Montagnini, Laurent U Perrinet et Guillaume S Masson. « Visual motion processing and human tracking behavior ». In : *Biologically Inspired Computer Vision*. Sous la dir. de Gabriel Cristóbal, Laurent U Perrinet et Matthias S Keil. Wiley-VCH Verlag GmbH et Co. KGaA, nov. 2015. Chap. 12. DOI : 10.1002/9783527680863.ch12. URL : https://laurentperrinet.github.io/publication/montagnini-15-bicv/

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B2 Bruno Cessac, Emmanuel Daucé, Laurent U Perrinet et Manuel Samuelides. « Introduction to Topics in Dynamical Neural Networks : From Large Scale Neural Networks to Motor Control and Vision ». In : *Topics in Dynamical Neural Networks : From Large Scale Neural Networks to Motor Control and Vision*. T. 142. The European Physical Journal Special Topics 1. Springer Verlag, mar. 2007, p. 1-5. DOI : 10.1140/epjst/e2007-00057-3. URL : http://www.springerlink.com/index/10.1140/epjst/e2007-00057-3

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4 Thèses et ouvrages

- Gabriel Cristóbal, Laurent U Perrinet et Matthias S Keil, éd. *Biologically Inspired Computer Vision*. Weinheim, Germany : Wiley-VCH Verlag GmbH et Co. KGaA, 7 oct. 2015. ISBN : 9783527680863. DOI : 10.1002/9783527680863. URL : http://onlinelibrary.wiley.com/book/10.1002/9783527680863
- Laurent U Perrinet et Emmanuel Daucé, éd. *Proceedings of the second french conference on Computational Neuroscience, Marseille*. Oct. 2008. URL : https://hal.archives-ouvertes.fr/NEUROCOMP08

- Bruno Cessac, Emmanuel Daucé, Laurent U Perrinet et Manuel Samuelides. *Topics in Dynamical Neural Networks : From Large Scale Neural Networks to Motor Control and Vision*. T. 142. The European Physical Journal (Special Topics) 1. Berlin / Heidelberg : Springer Verlag, mar. 2007
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5 Actes de conférences internationales à comité de lecture

104. Hugo Ladret, N. Cortes, Frédéric Y Chavane, Laurent U Perrinet et Christian Casanova. « Orientation selectivity to synthetic natural patterns in a cortical-like model of the cat primary visual cortex ». In : *Proceedings of the Society for Neuroscience conference*. 403.16 / P20. 2019. URL : https://www.abstractsonline.com/pp8/#!/7883/presentation/65859
103. Wahiba Taouali, Giacomo Benvenuti, Frédéric Y Chavane et Laurent U Perrinet. « A dynamic model for decoding direction and orientation in macaque primary visual cortex ». In : *Proceedings of NCCD, Capbreton*. 23 sept. 2019. URL : https://laurentperrinet.github.io/publication/perrinet-19-nccd
102. Victor Boutin, Angelo Franciosini, Frédéric Y Chavane, Franck Ruffier et Laurent U Perrinet. « Sparse Deep Predictive Coding to model visual object recognition ». In : *Proceedings of the Society for Neuroscience conference*. presentation number : 490.02. 2019. URL : https://laurentperrinet.github.io/publication/boutin-franciosini-ruffier-perrinet-19-sfn/
101. Angelo Franciosini, Victor Boutin et Laurent U Perrinet. « Modelling Complex Cells of Early Visual Cortex using Predictive Coding ». In : *CNS*2019, Barcelona*. P243. 2019. URL : https://www.cnsorg.org/cns-2019-poster-presentation-guide
100. Angelo Franciosini, Victor Boutin et Laurent U Perrinet. « A hierarchical, multi-layer convolutional sparse coding algorithm based on predictive coding ». In : *NeuroFrance 2019, International Conference from the Société des Neurosciences, Marseille, France*. 2019. URL : https://www.professionalabstracts.com/nf2019/iplanner/#/presentation/790
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98. Victor Boutin, Angelo Franciosini, Franck Ruffier et Laurent U Perrinet. « Unsupervised Hierarchical Sparse Coding algorithm inspired by Biological Vision ». In : *Doc2AMU Doctoral Day - 2018-11-23*. 2018
97. Victor Boutin, Angelo Franciosini, Franck Ruffier et Laurent U Perrinet. « From biological vision to unsupervised hierarchical sparse coding ». In : *iTwist, 2018*. 2018. URL : https://arxiv.org/abs/1812.01335

96. Julien Dupeyroux, Victor Boutin, Julien R Serres, Laurent U Perrinet et Stéphane Viollet. « M2APix : a bio-inspired auto-adaptive visual sensor for robust ground height estimation ». In : *ISCAS2018, IEEE International Symposium on Circuits and Systems*. 2018. URL : https://ieeexplore.ieee.org/abstract/document/8351433

95. Angelo Franciosini et Laurent U Perrinet. « On the Origins of Hierarchy in Visual Processing ». In : *Curves and Surfaces 2018, Arcachon*. 2018. URL : https://laurentperrinet.github.io/publication/franciosini-perrinet-18-cs/

94. Hugo Ladret et Laurent U Perrinet. « Selectivity to oriented patterns of different precisions ». In : *GDR Vision, Paris, 2018*. 2018. URL : https://github.com/hugoladret/InternshipM1/raw/master/2018-06_POSTER_final.pdf

93. Kiana Mansour Pour, Nikos Gekas, Pascal Mamassian, Laurent U Perrinet, Anna Montagnini et Guillaume S Masson. « Speed uncertainty and motion perception with naturalistic random textures ». In : *Journal of Vision, Vol.18, 345, proceedings of VSS*. 26.472. 2018. DOI : 10.1167/18.10.345. URL : https://laurentperrinet.github.io/publication/mansour-18-vss

92. Chloé Pasturel, Anna Montagnini et Laurent U Perrinet. « Estimating and anticipating a dynamic probabilistic bias in visual motion direction ». In : 2018. URL : https://laurentperrinet.github.io/publication/pasturel-18

91. Chloé Pasturel, Anna Montagnini et Laurent U Perrinet. « ANEMO : Quantitative tools for the ANalysis of Eye MOvements ». In : *Grenoble Workshop on Models and Analysis of Eye Movements, Grenoble, France*. 2018. URL : https://laurentperrinet.github.io/publication/pasturel-18-anemo

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89. Laurent U Perrinet. « A low-cost, accessible eye tracking framework ». In : *GDR Vision, Paris, 2018*. 2018. URL : https://github.com/laurentperrinet/Perrinet18gdr

88. Victor Boutin, Angelo Franciosini, Franck Ruffier et Laurent U Perrinet. « Controlling an aerial robot with human gestures using bio-inspired algorithm ». In : *Doc2AMU Doctoral Day - 2017-10-13*. 2017

87. Victor Boutin, Franck Ruffier et Laurent U Perrinet. « Efficient learning of sparse image representations using homeostatic regulation ». In : *Neuro-France 2017, International Conference from the Société des Neurosciences, Bordeaux, France*. 2017

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by speed uncertainty ≫. In : *Proceedings of ECVP*. 2017. URL : https://laurentperrinet.github.io/publication/mansour-17-ecvp/

84. Kiana Mansour Pour, Laurent U Perrinet, Guillaume S Masson et Anna Montagnini. « Voluntary tracking the moving clouds : Effects of speed variability on human smooth pursuit ». In : *GDR Vision, Lille, 2017*. 2017. URL : https://laurentperrinet.github.io/publication/mansour-17-gdr

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