

# CURRICULUM VITAE

GOFFART Laurent

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## Present professional position:

Research scientist for the Centre National de la Recherche Scientifique (CNRS)

Office : Institut de Neurosciences de la Timone  
UMR 7289 CNRS – Aix Marseille Université, Campus de Santé Timone,  
27 Bd. Jean Moulin, 13385 Marseille, France

## Universities:

**2016:** Aix-Marseille University, Master degree in *History and philosophy of fundamental sciences*.

**1996:** Claude Bernard University Lyon I, PhD thesis in *Neurosciences*.

**1992:** Claude Bernard University Lyon I, Diplôme d'Etudes Approfondies in *Neurosciences*.

**1991:** Lille University of Sciences and Technologies Lille I, Master degree in *Physiology*.

**1990:** Lille University of Human Sciences, Lille III, Master degree in *Experimental Psychology*.

## Trainings and self-learnings:

### 1. Trainings for data analysis

**2002:** "La statistique outil du biologiste et du médecin, modules spécialisés" (Centre d'Actualisation Scientifique et Technique de l'INSA, Lyon) : analysis of variance and simple plans, non-parametric statistics, linear regression, experimental plan, analysis of correlated data.

**2001:** "La statistique outil du biologiste et du médecin, module de base" (Centre d'Actualisation Scientifique et Technique de l'INSA, Lyon)

**2001:** "Initiation to programming with MATLAB" (Formation Permanente CNRS Rhône-Alpes, Lyon)

**2001:** "Statistics: Regression techniques" (FP CNRS Rhône-Alpes, Lyon)

**2001:** "Statistics: non parametric tests » (FP CNRS Rhône-Alpes, Lyon)

**2001:** "Statistics: data analysis" (FP CNRS Rhône-Alpes, Lyon)

### 2. Trainings for an exemplary use of animals in neurophysiological experiments

**2001:** "Anesthesia of primates and rodents" (FP CNRS Rhône-Alpes, Lyon)

**1999:** "Anesthesiology applied to the laboratory" (FP Université Louis Pasteur, Strasbourg)

**1999:** "Specialization in surgery" (CNRS, Marseille)

**1999:** "Breeding and observing primates' behavior" (FP Université Louis Pasteur, Strasbourg).

**1993:** "Biological experimentation" (Université Claude Bernard-Lyon1; Ecole vétérinaire de Lyon).

**1992:** "Initiation to Prevention Hygiene and Security" (INSERM Rhône-Alpes).

### **3. Training schools and self-education**

- 2017:** *Brain and memory: Concepts and transdisciplinary approaches*, CNRS Interdisciplinary School of exchange and training in Biology, Ile de Porquerolles, Porquerolles (France).
- 2017:** *History and epistemology of measurement* (Nadine de Courtenay, course of the Master of History and philosophy of Physics), University Paris-Diderot, Paris (France)
- 2014:** *Nonlinear Dynamics: Mathematical and Computational Approaches* (MOOC Liz Bradley) Santa Fe Institute, Santa Fe, New Mexico (USA).
- 2014:** *Introduction to Dynamical Systems and Chaos* (MOOC David Feldman) Santa Fe Institute, Santa Fe, New Mexico (USA).
- 2014:** *Introduction to Complexity* (MOOC Melanie Mitchell), SFI, Santa Fe, New Mexico (USA).
- 2014:** *The brain and space* (MOOC Jennifer Groh) Duke University, Durham, North Caroline (USA).
- 2014:** *Rare events in Biology*, CNRS Interdisciplinary School of exchange and training in Biology, Ile de Porquerolles, Porquerolles (France).
- 2013:** *Correlation, causality and regulation in Biology*, CNRS Interdisciplinary School of exchange and training in Biology, Ile de Berder, Larmor Baden (France).
- 2011:** *Cooperativity and singularity in Biology*, CNRS Interdisciplinary School of exchange and training in Biology, Ile de Berder, Larmor Baden (France).
- 2010:** *History and memory in Biology*, CNRS Interdisciplinary School of exchange and training in Biology, Ile de Berder, Larmor Baden (France).
- 2006:** *Linear servo-systems*, Formation Permanente CNRS Rhône-Alpes, Lyon (France)
- 1994:** *Multisensory Control of Movement*, International Summer School for Advanced Studies-NATO, Trieste (Italy).

#### **Research experience:**

- Since 2012:** CNRS Research Scientist at the Timone Neuroscience Institute, Marseille, France
- 2004-2011:** CNRS Research Scientist at the Mediterranean Institute of Cognitive Neurosciences, Marseille, France
- 1999-2003:** CNRS Research Scientist at INSERM u534, Espace et Action, Bron, France
- 1997-1998:** Post-doctoral training at the Division of Neuroscience, Baylor College of Medicine (Houston, Texas, U.S.A.), under the mentorship of Prof. David L. Sparks.
- 1996-1997:** Post-doctoral training at the Department of Psychology, University of Pennsylvania (Philadelphia, USA), under the mentorship of Prof. David L. Sparks.
- 1994:** Pre-doctoral training (4 weeks) in cerebellar electrophysiology in the rhesus monkey under the supervision of Prof. Albert F. Fuchs, Primate Research Center, Seattle (Washington, U.S.A.).
- 1992-1995:** Doctoral training under the supervision of Dr Denis Péliesson at INSERM U94, Vision et Motricité (director: Prof. Marc Jeannerod), Bron, France.
- 1989-1990:** Training (~10 months) in psychophysiology in the laboratory of Behavioral Neurosciences (director: Prof. Jean-Marie Coquery and Dr Jacques Honoré), University of Sciences and Technologies, Lille I, France: *Influence of eye position on the cutaneous facilitation of H-reflex in the human subject.*

#### **Other professional experiences (for supporting my academic cursus):**

- 1992-1996:** Ministry of Research, University Claude Bernard, Lyon1, research fellow
- 1990-1991:** Ministry of Defense, active military service.
- 1989-1990:** Académie de Lille, professional high-school, Genech, dormitory supervisor
- 1988-1989:** Académie de Lille, professional high-school Le Corbusier, Tourcoing, dormitory supervisor
- 1988:** Académie de Lille, high-school Paul Duez, Cambrai, dormitory supervisor.

**1987:** Académie de Lille, school Jacques Prévert, Caudry, school monitor  
**1986-1987:** Académie de Lille, school Lamartine, Cambrai, school monitor  
**1986:** Académie de Lille, professional high-school, Genech, school monitor

#### Membership and Honors:

- Member of the Société Française des Neurosciences
- Member of the Society for Neuroscience
- Member of the Neural Control of Movement Society
- Member of the Vision Sciences Society
- Friend of the Stanford Encyclopedia of Philosophy

**2019:** Acknowledgment of exceptionally good review from Journal of Vision  
**2011:** Scientific excellence award from CNRS  
**2009:** <http://www.cnrs.fr/insb/recherche/parutions/articles09/l-goffart.htm>  
**2008:** Top reviewer for the journal Vision Research  
**1996:** Post-doctoral fellowship from the Human Frontier Science Program Organization (LT58/96).  
**1996:** PhD thesis granted with the highest distinction.  
**1992-1995:** Research allocation from the French Ministry of Research to support the preparation of a PhD thesis in Neurosciences at INSERM U94 (director: Prof. M. Jeannerod).  
**1990:** Regiment's letter of congratulations for exemplary activity during the National Military Service

#### Scientific expertise:

Reviewer for the following funding agencies:

- *Cognitive Neuroscience Program of the National Science Foundation, USA*
- *ALW Programme, Earth & Life Sciences Council, The Hague, Netherlands*
- *Agence Nationale pour la Recherche, IRBA, France*

#### Editorial activities:

**Vitu F, Castet E & Goffart L** (Eds.) *Abstracts of the 16th European Conference on Eye Movements*, Marseille, 21-25 August 2011. *Journal of Eye Movement Research* 4(3) 2011.

**Member of the Editorial Board** of *The Journal of Neurophysiology*

**Reviewer for the following journals :**

*Brain research, Cerebellum, Cerebral Cortex, European Journal of Neuroscience, Experimental Brain Research, Journal of Neurophysiology, Journal of Neuroscience, Journal of Mathematical Neuroscience, Journal of Vision, Scientific Reports, Neuron, Neuroscience, Revue Neurologique, Scholarpedia, Vision Research.*

#### Supervision of post-doctoral fellows:

**2014-2015:** Mrs Julie Quinet, CNRS – Fondation de France, Fondation Berthe Fouassier

**2012-2014:** Mrs Julie Quinet, CNRS – ANR (VISAFIX)

**2007-2008:** Mrs Sandrine Hugues, CNRS-ANR (RETINAE)

#### Supervision of PhD students:

**2018-20XX:** M. Nicolas Orlando-Dessaints, Aix-Marseille Université

**2013-2017:** Mrs Clara Bourrelly, Université Paris-Descartes (co-direction with Prof. Patrick. Cavanagh, EU-funded project, ERC Position).

**2007-2011:** Mr Jérôme Fleuriet, INCM, CNRS-Université de la Méditerranée, Neurosciences.

**2007-2009:** Mr Lorenzo Guerrasio, Maximilian University München (co-direction with Prof. Ulrich Büttner, EU-funded project, Sensoprim).

**2001-2006:** Mrs Julie Quinet, Université Claude Bernard Lyon I, Neurosciences.

#### **Training of Master/DEA students:**

**2018:** M. Jérémy Morfin, Aix Marseille Université, master 1 Neurosciences.

**2016:** Mrs Morgane Chassignole, Aix Marseille Université, master 1 Neurosciences.

**2016:** Mr Adrien Tassou, Université de Montpellier, master 2 Neurosciences.

**2016:** Mr Robert Etoumbe, Université d'Alexandrie – Université de Bordeaux, master 2 Neurobiologie

**2015:** Mrs Karin Urbanc, Aix-Marseille Université, licence 3 Physiologie-Neurosciences.

**2013:** Mrs Clara Bourrelly, Aix Marseille Université, master 2 Neurosciences.

**2012:** Mrs Diane Deroualle, Aix Marseille Université, master 1 Neurosciences.

**2012:** Mr David Phrakornkham, Aix Marseille Université, master 1 Neurosciences.

**2009:** Mrs Chrystal Gaertner, Université de la Méditerranée, master 1 Neurosciences.

**2008:** Mr Anthony Dron, Université de la Méditerranée, master 1 Oceanography.

**2007:** Mrs Delphine Magistrali, Université de la Méditerranée, master 2 Neurosciences

**2002:** Mrs Julie Quinet, Université Claude Bernard Lyon I, DEA Neurosciences

**2001:** Mrs Julie Quinet, Université Claude Bernard Lyon I, master 1 Neurosciences

**2000:** Mr Nicolas Catz, Université Claude Bernard Lyon I, DEA Neurosciences

**1999:** Mr Nicolas Catz, Université Claude Bernard Lyon I, master 1 Neurosciences

**1995:** Mr Julien Jung, Université Claude Bernard Lyon I, master 1 Neurosciences

#### **Training of other students:**

**2001:** Mrs Tiphaine Rousseau, Ecole Nationale Vétérinaire de Toulouse, 2nd cycle veterinarian studies.

**2000:** Mrs Marie Maisonnier, Univ Claude Bernard Lyon I, C2 Psychobiol. des Comportements, PCEM2.

#### **Teaching courses:**

**2014:** Université Paris-Descartes, L3 Psychologie, teaching course titled : "*L'orientation du regard vers une cible visuelle statique : neurophysiologie sous-corticale*" (2 voluntary, i.e., unpaid hours).

**2013-201X:** Aix-Marseille Université, L3 Neurosciences intégratives, Faculté de médecine, teaching course titled: "*Neurophysiologie de la motricité oculaire*" (4 voluntary i.e., unpaid hours/year).

**2012-2017:** AMU, M1 Neurosciences, Spécialité Neurosciences intégratives et cognitives, course titled: "*Transformations sensorimotrices dans le système oculomoteur*". (8 voluntary hours/year).

**2012:** University of Sevilla, Spain, teaching course for the Physiology and Neuroscience Master, titled "*Brain mechanisms for orienting gaze toward a visual target*"

**2011-2012:** Ecole Normale Supérieure de Lyon, teaching course for the European Master BioSciences, course titled: "*Neurobiological mechanisms of eye movements*" (3 voluntary hours/year).

**2010-2011:** Aix-Marseille Université, M2 Physique-Biologie, cours intitulé "*Neurophysiologie de l'orientation visuelle du regard: réseaux sous-corticaux*" (6 voluntary hours/year).

**2009-2011:** Université de Provence M2 Psychologie et Neuropsychologie des Perturbations Cognitives cours titled "*Neurophysiologie des mouvements d'orientation du regard*" (6 voluntary hours/year).

**2009-2010:** Université de la Méditerranée, Marseille, M1 Analyses Sensorielles, course titled "*Neurophysiologie de l'orientation visuelle du regard: des muscles aux aires corticales associatives*" (4 voluntary hours/year).

**2002-2003:** Université Claude Bernard Lyon I, DEA (Master 2) Neurosciences, course titled "*Neurophysiologie de l'orientation saccadique du regard*" (2 hours)

**1995:** Université Claude Bernard Lyon I, Service de la Formation Continue, course "*Neurophysiology of posture and movement*" for the Diplôme d'Etat de Professeur de Danse (10 hours)

#### **Participation to PhD thesis committee**

**2017:** Emmanuelle Bellot, Université Grenoble Alpes, Grenoble, France

**2017:** Clara Bourrelly, Université Paris Descartes, Paris, France

**2014:** Julio Torres Torreló, Université de Séville, Spain.

**2012:** Céline Paeye, Université Lille III, Lille, France

**2012:** Soazig Casteau, Aix-Marseille Université, Marseille, France

**2012:** Jérôme Fleuriot, Université de la Méditerranée, Marseille, France

**2011:** Atiyeh Ghoreyshi, Mc Gill University, Canada

**2010:** Peter Bremen, Radboud University of Nijmegen, The Netherlands

**2006:** Nicolas Catz, University of Tübingen, Germany

**2006:** Julie Quinet, Université Claude Bernard Lyon 1, France

#### **Organization of symposia:**

**2011:** Coordinator of symposium "*Intercepting a moving target*" (V. Ferreira, L. Goffart, J. Smeets, J. Soechting) for the 21st Meeting of the Society Neural Control of Movement, Puerto Rico, USA.

**2006:** Coordinator of symposium "*The saccade-related cerebellum as a model of movement control and adaptation*" (U. Büttner, L. Goffart, L. Optican, R. R. Robinson & D. Suzuki) for the 16th Annual Meeting of the Society Neural Control of Movement, Key Biscaine, USA.

#### **Organization of conferences:**

**2012:** Member of the organizing committee of the inaugural meeting of INT, Marseille

**2011:** Scientific organization of the 11<sup>th</sup> European Conference on Eye Movements (ECEM 2011), Marseille (540 abstracts distributed in 40 symposia and 3 poster sessions).

#### **Fundings:**

**2017-2020:** Fondation pour la Recherche Médicale, "Predictive mechanisms for optimal pursuit eye movements": research project involving three investigators (L. Goffart, G. Masson & A. Montagnini).

**2017-2020:** Agence Nationale de la Recherche, "PREDICTEYE: Mapping and predicting trajectories for eye movements": research project involving three investigators (L. Goffart, G. Masson & A. Montagnini).

**2013-2017:** European Research Council, "POSITION: Predictive position coding" research project coordinated by P. Cavanagh (Université Paris-Descartes) and involving several teams across Europe.

**2010-2013:** Agence Nationale de la Recherche, "VISAFIX: Functional instability during ocular fixation: perceptual and motor consequences": research project involving five investigators (F. Chavane, L. Goffart, G. Masson, A. Montagnini & I. Vanzetta).

**2007-2010:** Agence Nationale de la Recherche, "MAPS: Mappings, Adaptation, Plasticity and Spatial Computation": research project involving 4 research teams: LORIA (F. Alexandre), Mouvement & Perception (E. Daucé), INCM/DyVA (L. Goffart) and LIRIS (E. Paugam-Moisy).

**2006-2009:** Agence Nationale de la Recherche, "RETINAE: Reflex tricks in natural and artificial eye movements": research project involving 2 research teams: Mouvement & Perception/Biorobotique (N. Franceschini (PI) and S. Viollet ) and INCM/DyVA (L. Goffart).

### **Administrative activities:**

**2019:** member of the study group Open Science for Aix-Marseille University (project HRS4R)

**2012-201X:** member of the Regional Ethical Committee for animal experiments (n°71)

**2008:** coordination and writing of responses to an investigation by the Scientific Committee on Health and Environmental Risks (SCHER) of the European Commission about the use of non-human primates in biomedical research.

**2004-2012:** Responsible for animal experiments at INCM.

**2007:** Coordination and writing of regulations in animal experiments at INCM.

**2007:** Upon the request of Mrs Magali Jacquier, head of «Board for animal experiments» at CNRS, coordination and writing of a report titled *“The use of non-human primates non humains in the research made at the Institut de Neurosciences Cognitives de la Méditerranée – INCM, UMR6193”*.

**2006:** Member of Committee of users of animal facilities at Institut des Neurosciences de la Timone, Marseille.

**2000-2004:** Responsible of animal facilities and animal experiments at research unit 534 of INSERM.

**2001:** Certificate of ability to maintain macaque rhesus monkeys.

# SCIENTIFIC PUBLICATIONS

## Doctoral Thesis:

### Goffart L

*L'orientation saccadique du regard vers une cible: étude de la contribution du cervelet médio-postérieur chez le chat en condition "tête libre"*

PhD in Neurosciences, University Claude Bernard Lyon I, april 1996, no 70-96.

Committee: Prof. Wolfgang Becker, Prof. Alain Berthoz, Prof. Jean-Marie Coquery, Dr Gabriel Gauthier, Prof. Marc Jeannerod, Dr Denis Pelisson, Prof. André Roucoux.

## Research reports:

### Goffart L

*Posture oculaire et facilitation cutanée du réflexe de Hoffman*

Master degree research report of Experimental Psychology (23 pages)

Laboratoire de Psychophysiologie, Université des Sciences et Techniques de Lille, sept 1990.

### Goffart L.

*Rôle fonctionnel du Noyau Prepositus Hypoglossi dans les déplacements du regard chez le chat.*

Research report for the Diplôme d'études approfondies of Neurosciences (35 pages)

Laboratory Vision et Motricité, Université Claude Bernard Lyon 1, juin 1992.

### Goffart L.

*Contribution critique à la recherche des fondements neuro-psycho-physiologiques de la notion d'espace.*

Master degree research report of History and Philosophy of Fundamental Sciences (119 pages)

Centre Epistémologie et d'Ergologie Comparative (CEPERC), Aix-Marseille Université, sept 2016.

### Goffart L.

*Itinéraire pour une contribution de la Neurophysiologie de l'orientation du regard à la recherche des conditions de possibilité de l'intuition spatiale (144 pages).*

Habilitation to direct research, Aix-Marseille University, 2019-2020.

## Articles:

**Vanni-Mercier G, Péliison D, Goffart L, Sakai K & Jouvét M.** Eye saccade dynamics during paradoxical sleep in the cat. *European Journal of Neuroscience* 6: 1298-1306, 1994.

**Goffart L & Péliison D.** Cerebellar contribution to the spatial encoding of orienting gaze shifts in the head-free cat. *Journal of Neurophysiology* 72: 2547-2550, 1994.

**Goffart L & Péliison D.** Implication of the fastigial nucleus in target localization and execution of orienting gaze shifts in the cat. In: "*Contemporary ocular motor and vestibular research: A tribute to David A. Robinson*" A.F. Fuchs, T. Brandt, U. Büttner et D. Zee (Eds) Thieme Verlag, Stuttgart, pp 282-284, 1994.

**Péliison D, Guitton D & Goffart L.** On-line compensation of gaze shifts perturbed by micro-stimulation of the superior colliculus in the head-free cat. *Experimental Brain Research* 106: 196-204, 1995.

**De Graaf JB, Péliison D, Prablanc C & Goffart L.** Modifications in end positions of arm movements following short term saccadic adaptation. *NeuroReport* 6: 1733-1736, 1995.

**Goffart L & Péliison D.** Changes in initiation of orienting gaze shifts after muscimol inactivation of the caudal fastigial nucleus in the cat. *Journal of Physiology (London)* 503.3: 657-671, 1997.

**Goffart L & Péliison D.** Orienting gaze shifts during muscimol inactivation of the caudal fastigial nucleus in the cat. I. Gaze dysmetria. *Journal of Neurophysiology* 79: 1942-1958, 1998.

- Goffart L, Pélisson D & Guillaume A.** Orienting gaze shifts during muscimol inactivation of the caudal fastigial nucleus in the cat. II. Dynamics and eye-head coupling. *Journal of Neurophysiology* 79: 1959-1976, 1998.
- Pélisson D, Goffart L & Guillaume A.** Contribution of the rostral fastigial nucleus to the control of orienting gaze shifts in the head-unrestrained cat. *Journal of Neurophysiology* 80: 1180-1196, 1998.
- Goffart L, Guillaume A & Pélisson D.** Compensation for gaze perturbations during inactivation of the caudal fastigial nucleus in the head-unrestrained cat. *Journal of Neurophysiology* 80: 1552-1557, 1998.
- Guillaume A, Goffart L & Pélisson D.** Learning from cerebellar lesions about the temporal and spatial aspects of saccadic control. *Behavioral and Brain Sciences* 22: 687-688, 1999
- Guillaume A, Goffart L, Courjon JH & Pélisson D.** Altered visuomotor behavior during inactivation of the caudal fastigial nucleus in the cat. *Experimental Brain Research* 132: 457-463, 2000.
- Goffart L.** Contrôle cérébelleux des mouvements d'orientation saccadique oculaire: étude neurophysiologique. *Bulletin de la Société Française d'Optique Physiologique* 9: 91-99, 2000.
- Chen L, Goffart L & Sparks DL.** A simple method for constructing microinjectrodes used to reversibly activate or inactivate cortical regions in head-unrestrained, behaving monkeys. *Journal of Neuroscience Methods* 107: 81-85, 2001.
- Pélisson D, Goffart L, Guillaume A, Catz N & Raboyeau G.** Early head movements elicited by visual stimuli or collicular electrical stimulation in the cat. *Vision Research* 41: 3283-3294, 2001.
- Pélisson D, Goffart L, Guillaume A & Quinet J.** Visuomotor deficits induced by fastigial nucleus inactivation. *The cerebellum* 2: 71-76, 2003.
- Pélisson D, Goffart L and Guillaume A.** Control of saccadic eye movements and combined eye/head gaze shifts by the medio-posterior cerebellum. In: *Neural control of space coding and action production* (Eds. C. Prablanc, D. Pélisson and Y. Rossetti), *Progress in Brain Research* vol. 142, Elsevier, Amsterdam, pp 69-89, 2003.
- Goffart L, Chen LL & Sparks D.L.** Saccade dysmetria during functional perturbation of the caudal fastigial nucleus in the monkey. *Annals of the New York Academy of Sciences* 1004: 220-228, 2003.
- Quinet J & Goffart L.** Influence of head restraint on visually triggered saccades in the rhesus monkey. *Annals of the New York Academy of Sciences* 1004: 404-408, 2003.
- Koene A & Goffart L.** Accounting for saccade dysmetria after cerebellar lesion: A modeling approach. *Annals of the New York Academy of Sciences* 1004: 389-393, 2003.
- Goffart L, Chen LL & Sparks D.L.** Deficits in saccades and fixation during muscimol inactivation of the caudal fastigial nucleus in the rhesus monkey. *Journal of Neurophysiology* 92: 3351-3367, 2004.
- Goffart L & Quinet J.** Neurophysiologie de l'orientation saccadique du regard vers une cible visuelle. In : Delfour F. & Dubois MJ (Eds) *Autour de l'éthologie et la cognition animale*", collection "Ethologie et psychologie des communications", P.U.L. pp 19-33, 2005.
- Quinet J. & Goffart L.** Saccade dysmetria in head-unrstrained gaze shifts after muscimol inactivation of the caudal fastigial nucleus in the monkey. *Journal of Neurophysiology* 93: 2343-2349, 2005.
- Goffart L, Quinet J, Chavane F & Masson GS.** Influence of background illumination on fixation and visually-guided saccades in the rhesus monkey. *Vision Research* 46: 149-162, 2006.
- Quinet J & Goffart L.** Head unrestrained gaze shifts after muscimol injection in the caudal fastigial nucleus of the monkey. *Journal of Neurophysiology* 98: 3269-3283, 2007.
- Hafed Z, Goffart L & Krauzlis RJ.** Superior colliculus inactivation causes stable offsets in eye position during tracking. *Journal of Neuroscience* 28: 8124-8137, 2008.
- Goffart L.** Saccadic eye movements. In: Squire LR (ed.) *Encyclopedia of Neuroscience*, vol. 8, pp. 437-444. Oxford: Academic Press, 2009.
- Hafed ZM, Goffart L & Krauzlis RJ.** A neural mechanism for microsaccade generation in the primate superior colliculus. *Science* 323: 940-943, 2009.



**Quinet J & Goffart L.** Electrical microstimulation of the fastigial oculomotor region in the head unrestrained monkey. *Journal of Neurophysiology* 102: 320-336, 2009.

**Guerrasio L, Quinet J, Büttner U & Goffart L.** The fastigial oculomotor region and the control of foveation during fixation. *Journal of Neurophysiology* 103: 1988-2001, 2010.

**Fleuriet J, Hugues S, Perrinet L & Goffart L.** Saccadic foveation of a moving visual target in the rhesus monkey. *Journal of Neurophysiology* 105: 883–895, 2011.

**Fleuriet J & Goffart L.** Saccadic interception of a moving visual target after a spatiotemporal perturbation. *Journal of Neuroscience* 32:452–461, 2012.

**Goffart L & Fleuriet J.** Hic-et-nunc (here-and-now) encoding of a moving target for its saccadic foveation. *i-Perception* 3:741, 2012.

**Goffart L, Hafed ZM & Krauzlis RJ.** Visual fixation as equilibrium: evidence from superior colliculus inactivation. *Journal of Neuroscience* 32:10627–10636, 2012.

**Bourrelly C, Quinet J & Goffart L.** Unsupervised dynamic morphing of a spatiotemporal visual event during its oculomotor tracking. *Journal of Vision* 14(10): 492, 2014.

**Goffart L, Quinet J & Bourrelly C.** Foveating a moving target, here-and-now. *Journal of Vision* 14(10): 495, 2014.

**Bourrelly C, Quinet J & Goffart L.** Evolution of the oculomotor tracking with an accelerating or decelerating target. *Journal of Vision* 15(12):1016, 2015.

**Quinet J & Goffart L.** Cerebellar control of saccade dynamics: contribution of the fastigial oculomotor region. *Journal of Neurophysiology* 113: 3323–3336, 2015.

**Quinet J & Goffart L.** Does the brain extrapolate the position of a transient moving target? *Journal of Neuroscience* 35:11780-11790, 2015.

**Taouali W, Goffart L, Alexandre F & Rougier NP.** A parsimonious computational model of visual target position encoding in the superior colliculus. *Biological Cybernetics* 109:549-559, 2015.

**Goffart L, Cecala A & Gandhi N.** Does the saccade-related burst in the superior colliculus convey commands related to the future location of a moving target? *Journal of Vision* 6(12):98, 2016.

**Bourrelly C, Quinet J, Cavanagh P & Goffart L.** Learning the trajectory of a moving visual target and evolution of its tracking in the monkey. *Journal of Neurophysiology* 116: 2739-2751, 2016.

**Krauzlis RJ, Goffart L & Hafed ZM.** Neuronal control of fixation and fixational eye movements. *Philosophical Transactions B* 372(1718) 20160205, 2017.

**Goffart L.** Saccadic eye movements: basic neural processes. *Reference Module in Neuroscience and Biobehavioral Psychology*, Elsevier 2017.

**Goffart L, Bourrelly C & Quinet J.** Synchronizing the tracking eye movements with the motion of a visual target: basic neural processes. *Progress in Brain Research* 236: 243–268, 2017

**Goffart L, Cecala A & Gandhi NJ.** The superior colliculus and the steering of saccades toward a moving visual target. *Journal of Neurophysiology* 118: 2890–2901, 2017.

**Goffart L.** Parallel and continuous visuomotor processing of simultaneously moving targets. *Journal of Vision* 17(10): 901, 2017.

**Quinton J-C & Goffart L.** A unified dynamic neural field model of goal directed eye movements. *Connection Science* 30(1): 20-52, 2018.

**Bourrelly C, Quinet J, & Goffart L.** The caudal fastigial nucleus and the steering of saccades toward a moving visual target. *Journal of Neurophysiology* 120: 421-438, 2018.

**Bourrelly C, Quinet J, & Goffart L.** Pursuit disorder and saccade dysmetria after caudal fastigial inactivation in the monkey. *Journal of Neurophysiology* 120: 1640–1654, 2018.

**Goffart L.** De la représentation cérébrale spatio-temporellement distribuée à la capture ici et maintenant d'un objet visuel en mouvement. In: *L'avenir de la complexité et du désordre* (Eds. J-C. Lévy & S. Ofman) Editions matériologiques, pp 267-294, 2018.

**Goffart L, Burrelly C & Quinton J-C.** Neurophysiology of visually-guided eye movements: Critical review and alternative viewpoint. *Journal of Neurophysiology* 120: 3234–3245, 2018.

**Goffart L.** Kinematics and the neurophysiological study of visually-guided eye movements. *Progress in Brain Research* 248: 375-384, 2019.

**Hafed ZM & Goffart L.** Gaze direction as equilibrium: more evidence from spatial and temporal aspects of small-saccade triggering in the rhesus macaque monkey. *Journal of Neurophysiology* in press.

## Posters

**Goffart L, Bourdeaud'hui M, Honoré J & Coquery J-M.** Can eye position modify the H-reflex modulation induced by a cutaneous stimulation? *15th Annual Meeting of the European Neuroscience Association, Munich, Germany, sept 1992.*

**Goffart L & Péliison D.** Gaze saccades during functional inactivation of the fastigial nucleus in the cat. *32nd Meeting of the International Union of Physiological Sciences, Glasgow, Ecosse, august 1993.*

**Péliison D, Guitton D & Goffart L.** On-line compensation of gaze shifts perturbed by micro-stimulation of the superior colliculus. *16th Annual Meeting of the European Neuroscience Association, ("Information processing underlying gaze control"), Sevilla, Spain, sept 1993.*

**Péliison D & Goffart L.** Implication of the fastigial nucleus in target localization and execution of orienting gaze shifts in the cat. *Meeting "Four decades of seminal eye movement research: A tribute to D.A. Robinson", Eibsee, Germany, sept 1993.*

**Goffart L & Péliison D.** Contribution du cervelet à la structuration motrice de l'espace visuel. *6ème Ophthalmological Seminars IPSEN, Abbaye de Royaumont, France, march 1994.*

**de Graaf JB, Péliison D, Prablanc C & Goffart L.** Couplage des systèmes moteurs oculaires et manuels: transfert au pointage manuel d'une adaptation de la saccade oculaire. *Meeting du Groupe Rhône-Alpes en Sciences Cognitives, Lyon, France, nov 1994.*

**Goffart L & Péliison D.** Cerebellar contribution to visuo-spatial transformations for orienting movements. *5th Annual Meeting of the Society Neural Control of Movement, Key West, USA, april 1995.*

**Goffart L & Péliison D.** Cervelet et transformations visuo-spatiales pour l'orientation du regard. *2ème Symposium de la Société Française des Neurosciences, Lyon, France, may 1995.*

**Guillaume A, Goffart L, Jung J & Péliison D.** Gaze shifts evoked by superior colliculus stimulation in the head-free cat following cerebellar inactivation. *19th Annual Meeting of the European Neuroscience Association, Strasbourg, France, sept 1996.*

**Péliison D, De Graaf J.B, Prablanc C & Goffart L.** Modification des mouvements de pointage manuel induite par adaptation des saccades du regard. *2nd Symposium of the Société Française des Neurosciences, Lyon, France, may 1995.*

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**Péliison D & Goffart L.** Orienting movements towards visual targets following inactivation of the medial cerebellar nucleus in the cat. *18th Annual Meeting of the European Neuroscience Association, Amsterdam, Netherlands, sept 1995.*

**Péllisson D & Goffart L.** Interaction between gaze shifts initiation and dysmetria following cerebellar inactivation in the head-free cat. *19th Annual Meeting of the European Neuroscience Association*, Strasbourg, France, sept 1996.

**Goffart L & Sparks DL.** Saccadic dysmetria after muscimol inactivation of the caudal fastigial nucleus in the rhesus monkey. *27th Annual Meeting of the Society for Neurosci*, New Orleans, USA, oct 1997.

**Péllisson D, Goffart L & Guillaume A.** Rostro-caudal organization of the cat cerebellar fastigial nucleus in gaze control. *27th Annual Meeting of the Society for Neuroscience*, New Orleans, USA, oct 1997.

**Goffart L & Sparks DL.** Cerebellar dysmetria: an execution deficit, a planning deficit or both? *8th Annual Forum of Neuroscience Rush and Helen Record*, Galveston, USA, march 1998.

**Goffart L, Sparks DL & Kalesnykas RP.** Saccades evoked by electrical microstimulation of the fastigial saccade-related area in the head-fixed monkey. *28th Annual Meeting of the Society for Neuroscience*, Los Angeles, USA, nov 1998.

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**Goffart L, Catz N, Quinet J & Péllisson D.** Mouvements des yeux et de la tête évoqués par microstimulation électrique du Noyau Fastigial chez le chat. *5th Symposium of the Société Française des Neurosciences*, Toulouse, France, may 2001.

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**Koene A & Goffart L.** Accounting for saccade dysmetria after cerebellar lesion: A modeling approach. *3rd International Meeting Ocular Motor "Physiology and Disorders of Oculomotor and Vestibular Control"*, Wildbad Kreuth, Germany, april 2003.

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**Quinet J, Goffart L & Chen LL** Contribution of the Caudal Fastigial Nucleus to the control of orienting gaze shifts in the head-unrestrained monkey. *34th Meeting of the Society for Neuroscience*, San Diego, USA, oct 2004

**Quinet J & Goffart L** Electrical microstimulation of the fastigial nucleus in the head-unrestrained monkey. *7th Meeting of the Société Française des Neurosciences*, Lille, France, may 2005

**Goffart L, Koene A & Quinet J.** Coupling between the horizontal and vertical saccade generators after inactivation of the caudal fastigial nucleus in the monkey. *7th Meeting of the Société Française des Neurosciences*, Lille, France, may 2005

**Hugues S, Barthélémy F, Masson GS & Goffart L.** Fixational saccades in the head restrained monkey: effects of target size. *36th Annual meeting of the Society for Neuroscience*, Atlanta, USA, oct 2006.

**Quinet J & Goffart L.** Contribution of the caudal fastigial nucleus to the control of orienting gaze shifts in the head unrestrained monkey. *16th Annual meeting of the Society Neural Control of Movement*, Key Biscaine, USA, may 2006.

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**Fleuriet J, Hugues S & Goffart L.** The dynamics of visual signals driving saccades toward moving targets in the monkey. *38th Annual Meeting of the Soc for Neurosci*, Washington DC, USA, nov 2008.

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**Quinet J & Goffart L.** Eye and head movements evoked by electrical stimulation of the caudal fastigial nucleus in the head-unrestrained monkey. *25th Meeting of the Bâràny Society*, Kyoto, Japan, march 2008.

**Goffart L & Quinet J.** Contrôle cérébelleux de l'orientation du regard vers une cible visuelle: apport des études chez le primate non humain. *Journée de Neurologie de langue française*, Lille, april 2009.

**Goffart L, Takerkart S & Rossel S.** Studying foveating saccades in the praying mantis with high speed imaging. *39th Annual Meeting of the Society for Neuroscience*, Chicago, USA, nov 2009.

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**Fleuriet J & Goffart L.** Spatial localization of a moving target: compensation for changes in eye position induced by microstimulation of the deep Superior Colliculus in the monkey. *40th Annual Meeting of the Society for Neuroscience*, San Diego, USA, nov 2010.

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**Goffart L.** On the utility of neural perturbation experiments for identifying the neural components of an integrated system. *Joint Meeting ITMO Neurosciences & 10th Neurobiology Conferences Ladislav Tauc*, Gif-sur-Yvette, feb 2010.

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**Goffart L.** The shape of the orienting reaction and its neural representations. *First international workshop on the shapes of brain dynamics*, Paris, june 2010.

**Goffart L & Fleuriet J.** Dynamic morphing of a spatiotemporal event for the orienting reaction. *Ladislav Tauc & GDR MSPC Neurosciences Conference*, Gif-sur-Yvette, dec 2010.

**Fleuriet J & Goffart L.** "Hic-et-nunc" representation of a gaze target: monkeys accurately foveate a moving target after a spatiotemporal perturbation. *10th Colloque of the Société des Neurosciences*, Marseille, may 2011.

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**Simoncini C, Montagnini A, Quinet J, Goffart L & Masson G.** Fixational saccades are scaled with the statistics of visual scene. *Meeting of the Vision Sciences Society*, Naples, USA, april 2012.

**Bourrelly C, Quinet J & Goffart L.** Learning the trajectory of a moving target: a study in the naive monkey. *GDR Vision*, Paris, France.

**Bourrelly C, Quinet J & Goffart L.** Equilibria and transitions during visual tracking: learning to track a moving visual target in the monkey. *43rd Annual Meeting of the Soc. for Neuroscience*, San Diego, USA, nov 2013.

**Quinet J, Bourrelly C & Goffart L.** Building an internal model of expected target position for the control of visual tracking. *43rd Annual Meeting of the Soc. for Neurosci*, San Diego, USA, nov 2013.

**Quinet J & Goffart L.** Building an internal model of an expected moving target in the inexperienced monkey. *GDR Vision*, Paris, France.

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**Bourrelly C, Quinet J & Goffart L.** Unsupervised dynamic morphing of a spatiotemporal visual event during its oculomotor tracking. *Meeting of the Vision Sciences Society*, Ste Pete Beach, USA, june 2014.

**Goffart L, Quinet J & Bourrelly C.** Foveating a moving target, here-and-now. *Meeting of the Vision Sciences Society*, Ste Pete Beach, USA, june 2014.

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**Goffart L, Bourrelly C & Quinet J.** Tracking a moving visual target here-and-now. *Colloque Fondation IPSEN Micro-, meso- and macrodynamics of the brain*, april 2015

**Goffart L, Cecala A & Gandhi N.** The motor burst of saccade-related neurons in the deep superior colliculus during interceptive saccades. *44th Annual Meeting of the Soc. for Neuroscience*, Chicago, USA, nov 2015.

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**Goffart L, Bourrelly C & Quinet J.** The relations between some mathematics and the neurophysiology of visually-guided eye movements. *Mathematical modeling in motor neuroscience, a meeting in honor of Lance Optican*, Pavia, Italie, june 2018.

**Goffart L.** Critical revision of the neurophysiology of tracking eye movements. *Meeting of GDR Neural Net*, Paris, dec 2018.

**Goffart L.** Cerebellar control of gaze orientation toward visual targets: studies in the non-human primate. *Cerebellum-Striatum-Hippocampus network: bridging the gap between basic science and clinical research*, ICM and Hospital La Salpêtrière, Paris, mars 2019.

**Goffart L.** Sensorimotor transformation: lessons from the neurophysiological study of visually-guided eye movements. *Meeting of GDR Neural Net*, Bordeaux, dec 2019

**Goffart L, Quinet J & Bourrelly C.** Cerebellar control of visually-guided eye movements by the bilateral mass of activity in the caudal fastigial nuclei. *Meeting of GDR Neural Net*, Bordeaux, dec 2019.

**Orlando-Dessaints N, Montagnini A & Goffart L.** Does the target path frequency influence its visual tracking? A study in the rhesus macaque monkey. *Meeting of GDR Vision*, Marseille, oct 2019.

**Orlando-Dessaints N, Montagnini A & Goffart L.** Tracking a moving visual target in the monkey: influence of the path frequency. *48th Annual Meeting of the Soc. for Neuroscience*, Chicago, USA, nov 2019.

## Oral communications

**Goffart L & Péliison D.** Rôle fonctionnel du noyau prepositus hypoglossi dans les déplacements du regard chez le chat. *Rencontres des 3èmes Cycles en Neurosciences*, Marseille, France, oct 1992.

**Péliison D & Goffart L.** Rôle du cervelet dans le codage spatial de cibles visuelles. *7ème Journées Neurosciences et Sciences de l'Ingénieur*, Chamonix, France, may 1994.

**Goffart L & Péliison D.** Spatial deficits after cerebellar inactivation. *Summerschool "Multisensory Control of Movement"*, *International School for Advanced Studies*, Trieste, Italy, july 1994.

**Goffart L & Péliison D.** Cerebellar contribution to localization of the goal for orienting gaze shifts in the cat. *17th Annual Meeting of the European Neuroscience Association*, Vienne, Austria, sept 1994.

**Goffart L & Péliison D.** Altered visuo-motor mapping after fastigial nucleus inhibition in the alert cat. *24th Annual Meeting of the Society for Neuroscience*, Miami Beach, USA, nov 1994.

**Péliison D & Goffart L.** Visuo-motor transformation deficits after inactivation of the caudal fastigial nucleus in the head-free cat. *25ème Meeting Annuel de la Society for Neuroscience*, San Diego, USA, nov 1995.

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**Goffart L, Chen LL & Sparks DL.** Saccadic dysmetria and timed perturbation of the caudal fastigial nucleus in the rhesus monkey. *29ème Meeting Annuel de la Society for Neuroscience*, Miami Beach, USA, oct 1999.

**Goffart L.** Contrôle cérébelleux des mouvements oculaires saccadiques chez le singe. *Meeting de la Société Française d'Optique Physiologique*, Sciences de la Vision, Lyon, june 2000.

**Goffart L & Sparks DL.** "Rebound" saccades evoked by electrical microstimulation of the caudal fastigial nucleus in the head-restrained monkey. *3rd Forum of European Neurosciences*, Paris, France, july 2002.

**Goffart L, Koene A & Quinet J.** Coupling between horizontal and vertical saccade generators after muscimol injection in the monkey caudal fastigial nucleus. *35th Annual Meeting of the Society for Neuroscience*, Washington DC, USA, nov 2005.

**Goffart L.** How does the brain translate the location of a sensory event into the endpoint of a movement? Lessons from studying orienting gaze shifts during dysfunction of the medio-posterior cerebellum. *16th Annual Meeting of the Society Neural Control of Movement*, Key West, USA, may 2006.

**Goffart L, Hafed ZM, Dill N & Krauzlis RJ.** Changes in eye position during fixation caused by inactivation of the rostral superior colliculus. *36th Annual Meeting of Society for Neuroscience*, Atlanta, USA, oct 2006.

**Goffart L & Quinet J.** Contribution of the medio-posterior cerebellum to the control of orienting gaze shifts. *17th Annual Meeting of the Society Neural Control of Movement*, Sevilla, Espagne, march 2007.

**Goffart L.** Capture fovéale d'une cible visuelle: mécanismes sous-corticaux. *Journée oculomotricité. GDR Vision, Colloque annuel de la communauté des chercheurs sur la vision*, Lille, jan 2008.



**Goffart L.** The fastigial oculomotor region and the cerebellar control of gaze orientation. *“Neural mechanisms in control of eye, head and limb movements”*. *Satellite Symposium to the 25th Meeting of the Bàràny Society in honor to Prof. Yoshikazu Shinoda*, Kyoto, Japan, march 2008.

**Goffart L & Quinet J.** Coupling between the horizontal and vertical saccade generators after inactivation of the caudal fastigial nucleus in the monkey. *25th Meeting of the Bàràny Society*, Kyoto, Japan, april 2008.

**Goffart L.** The caudal fastigial nucleus and the control of gaze orientation: lessons from perturbation experiments in the cat and monkey. *Meeting “Neural mechanisms of oculomotor and vestibular functions” in honor to Prof Albert Fuchs*, Medford, Oregon, USA, oct 2008.

**Goffart L.** On the utility of neural perturbation experiments for identifying the neural components of an integrated system. *Neural Control of Movement Satellite Meeting*, Naples, USA, april 2010.

**Fleuriet J, Hugues S, Perrinet L & Goffart L.** Saccadic foveation of a moving target without and with a spatiotemporal perturbation. *16th European Conference on Eye Movements*, Marseille, *Journal of Eye Movement Research* 4(3) 2011.

**Goffart L.** Singularités et coopérativités dans la réaction d’orientation. *Ecole interdisciplinaire de formation BERDER* 2011.

**Goffart L.** Cerebellar mechanisms for orienting the fovea toward a visual target. *16th European Conference on Eye Movements, Marseille*, *Journal of Eye Movement Research* 4(3) 2011.

**Goffart L.** Intercepting a moving target. *21st Annual Meeting of the Society Neural Control of Movement*, Puerto Rico, USA, april 2011.

**Goffart L & Fleuriet J.** “Hic-et-nunc” encoding of saccade targets. *Colloque du GDR Vision, Colloque annuel de la communauté des chercheurs sur la vision*, Marseille, dec 2011.

**Goffart L.** Hic-et-nunc encoding of saccade targets. *Primate Neurobiology Conference*, march 2012

**Goffart L.** Hic-et-nunc (here-and-now) encoding of a moving target for its saccadic foveation. *Asia Pacific Conference on Vision*, Icheon, South Korea, july 2012.

**Krauzlis R, Hafed Z & Goffart L.** The equilibrium hypothesis and population coding in the superior colliculus. *European Conference on Eye Movements*, Lund, Swden, aug 2013

**Goffart L.** Neurophysiologie de la capture fovéale d’une cible visuelle en mouvement. *GT8 Robotique et Neurosciences Génération de mouvement et contrôle moteur*, Toulouse, april 2013

**Goffart L.** From space-time to hic-et-nunc (here-and-now) representation in the brain: history of an exploding bubble. *Retreat of the team INVIBE*, Ceillac, jan 2014.

**Goffart L.** The caudal Fastigial Nucleus in the cerebellar modulation of saccade amplitude. *INT-LPP Fest*, Laboratoire de Psychologie de la perception, Université Paris-Descartes, jan 2014.

**Goffart L.** Neurophysiologie de la capture fovéale d'une cible visuelle. *Demi-journée de réflexion sur le modèle PNH*, Institut de Neurosciences de la Timone, Marseille, april 2014.

**Goffart L.** Cerebellar control of saccade dynamics. *Première réunion du Club “Mouvement des yeux”* may Montpellier 2015.

**Goffart L.** Is there a predictive remapping in the superior colliculus during the generation of interceptive saccades? *Réunion de travail ERC Position*, Laboratoire de Psychologie de la perception, Université Paris-Descartes, Paris, oct 2015.

**Goffart L.** From its spatio-temporally distributed representation in the brain to the here-and-now foveation of a moving visual object. *GDR Vision, Colloque annuel de la communauté des chercheurs sur la vision*, Grenoble, France, dec 2015.

**Goffart L.** De la représentation spatio-temporellement distribuée dans le cerveau à la capture ici-et-maintenant d'un objet visuel en mouvement. *Colloque Complexité et désordre 2016: adaptation, dynamique, localization*. Institut Henri Poincaré, Paris, jan 2016.

**Quinton JC & Goffart L.** A neural field model of the dynamics of goal-directed eye movements. *Bio-comp: implémentations matérielles du calcul naturel*, Lyon, France, oct 2016.

**Goffart L.** Contribution à la recherche de la structure spatiotemporelle sous-jacente au dynamisme visuo-oculomoteur. *Colloque Complexité et désordre 2017*, Institut Henri Poincaré, Paris, jan 2017.

**Goffart L.** Cerebellar control of saccades by the size of the active population in the caudal fastigial nucleus. *A meeting honoring our memory of late David A. Robinson*, Baltimore (USA), may 2017.

**Goffart L.** Brain processes for accurate foveation and tracking of a visual target. *Neural basis of motor control (Reza Shadmehr)*, Johns Hopkins University, Baltimore, may 2017.

**Goffart L.** Entre les mesures comportementales et le milieu de fonctionnement intracérébral: réflexions sur le dynamisme visuomoteur. *Journée d'étude sur la mesure (Igor Ly) CEPERC CNRS-Aix Marseille Université*, june 2017.

**Goffart L.** Grandeurs spatiales et fonctionnement interne du cerveau. *Séminaire des doctorants, CEPERC CNRS-Aix Marseille Université*, oct 2017.

**Goffart L. & Bourrelly C.** Neurophysiologie de la synchronisation visuomotrice locale. *Colloque Complexité et désordre 2018*, Université Paris Diderot, Paris, jan 2018.

**Goffart L. & Bourrelly C.** Neurophysiology of visuomotor local synchronization. *Visual motion meeting*, INT, Marseille, feb 2018.

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