Romain Brasselet

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Nationality: French
Birthday: April 2nd, 1982

Postdoctoral Experience

10/19 – 10/20 Postdoctoral researcher at SISSA, Trieste.
Member of the Time Perception lab led by Domenica Bueti.

04/18 - 04/19 Postdoctoral researcher at SISSA, Trieste.
Member of the Language, Learning and Reading lab led by Davide Crepaldi.

11/13 – 10/17 Postdoctoral researcher at SISSA, Trieste. Awarded the SISSA Excellence grant.
Work in collaboration with Mathew Diamond, Alessandro Treves, Davide Crepaldi and Valentina Parma.

11/12 – 10/13 Postdoctoral researcher at the University Pompeu Fabra, Barcelona.
Investigator of the CORONET European project.
Member of the Computational Neuroscience group led by Gustavo Deco.

01/11 – 08/12 Postdoctoral researcher at the Max-Planck Institute for Biological Cybernetics, Tübingen.
Funded by the Bernstein Center For Computational Neuroscience.
Member of Christoph Kayser's group, in collaboration with Stefano Panzeri, in Nikos Logothetis's department.

PhD

2007 – 2010 PhD at the Laboratoire de Neurobiologie des Processus Adaptatifs,
University Pierre & Marie Curie, Paris, France,
Member of Angelo Arleo's team,
Funded by the European project SENSOPAC, IST-027819-IP and by the Fondation pour la Recherche Médicale (FRM).

Thesis: *Neural coding in the ascending somatosensory pathway: a metrical information theory approach.*
Awarded with highest honours on December, 3rd 2010 by a jury composed of:
Stefano Panzeri, Italian Institute of Technology, Genova
Jonathan D. Victor, Weill Cornell Medical College, New-York
Roland S. Johansson, Umea University, Umea, Sweden
Vincent Hayward, ISIR-UPMC, Paris
Simon Thorpe, CERCO, Toulouse

Autumn 2009 Teaching Assistant in mathematics for 2nd year biology students,
University Pierre & Marie Curie, Paris, France.

Predoctoral Cursus

2006 – 2007 Preparation to the agrégation in Physics-Chemistry.
University of Provence, Marseille, France.

2005 – 2006 Master 2 in theoretical physics, mathematical physics and particle physics with high honours, Centre de Physique Théorique, Marseille, France.

2004 – 2005 Master 1 in fundamental physics with ERASMUS program with high honours.
Imperial College, London, United-Kingdom.

Journal articles

Hachen I, Reinartz S, Brasselet R, Stroligo A & Diamond, ME. Dynamics of history-dependent perceptual judgment (2021). *Nature Communications* (in press).
https://www.biorxiv.org/content/10.1101/2020.07.12.199489v1

Scialò C, Tran TH, Salzano G, Novi G, Caponnetto C, Chiò A, Calvo A, Canosa A, Moda F, Caroppo P, Silani V, Ticozzi N, Ratti A, Borroni B, Benussi L, Ghidoni R, Furlanis G, Manganotti P, Senigagliesi B, Parisse P, Brasselet R, Buratti E and Legname G. TDP-43 real-time quaking induced conversion reaction optimization and detection of seeding activity in CSF of amyotrophic lateral sclerosis and frontotemporal dementia patients (2020). *Brain communications*, *2*(2).

Zamora-López G & Brasselet R. Sizing complex networks (2019). *Communications Physics*, *2*(1), 1-10.

Boboeva V, Brasselet R, & Treves A. The capacity for correlated semantic memories in the cortex (2018). *Entropy*, *20*(11), 824.

Brasselet R & Arleo A. Category structure and categorical perception jointly explained by similarity-based information theory (2018). *Entropy*, *20*(7), 527.

Parma V, Brasselet R, Zoia S, Bulgheroni M, & Castiello U. The origin of human handedness and its role in pre-birth motor control (2017). *Scientific reports*, *7*(1), 16804.

Bengtsson F, Brasselet R, Johansson RS, Arleo A, & Jörntell H. Integration of sensory quanta in cuneate nucleus neurons in vivo (2013). *PLoS One*, *8*(2), e56630.

Brasselet R, Panzeri S, Logothetis NK and Kayser C. Neurons with stereotyped and rapid responses provide a reference frame for relative temporal coding in primate auditory cortex (2012). *The Journal of Neuroscience*, 32(9): 2998-3008.

Bologna LL, Pinoteau J, Brasselet R, Maggiali M and Arleo A. Encoding/decoding of first and second order tactile afferents in a neurorobotic application (2011). *Journal of Physiology P*, 105(1-3): 25-35.

Brasselet R, Johansson RS and Arleo A. Quantifying neurotransmission reliability through metrics based information analysis (2011). *Neural Computation*, 23(4): 852-881.

Brasselet R, Johansson RS and Arleo A. Optimal context separation of spiking haptic signals by second-order somatosensory neurons (2009). In Bengio, Y. et al., editors, *Advances in Neural Information Processing Systems* 22: 180-188.

Conference articles

Brasselet R, Johansson RS and Arleo A. *Isometric coding of spiking haptic signals by peripheral somatosensory neurons*. (2011) In Cabestany, J. et al., editors, LNCS - Advances on Computational Intelligence, 6691: 528-536.

Brasselet R and Arleo A. *Local metrical information: application to the perceptual magnet effect*. (2010) In Gervais, R. et al., editors, Proceedings of the Fifth French conference on computational neuroscience (Neurocomp): 132-136.

Bologna LL, Brasselet R, Maggiali M. and Arleo, A. *Effective encoding/ decoding of spiking signals from an artificial touch sensor*. (2010) In Gervais, R. et al., editors, Proceedings of the Fifth french conference on computational neuroscience (Neurocomp): 120-125.

Language skills

French: mother tongue
English: reading, writing, speaking (C2)
Italian: good command (C1/C1)
Spanish: good command (B1/B2)
German: basic communication skills

Operating systems: Windows, Linux
C/C++, Matlab, Mathematica, Python, R
Word processing: LATEX, Word

Teaching experience

2018-2022 3-hour module every year on “Decoding neural populations: Information theory and decoding approaches” in the UE Neural Networks at la Sorbonne University.

06/2019 12-hour course at SISSA on *Introduction to statistics in R*.

2018/2019 Teacher at the Scuola Galileiana in Padova. 15-hour course on *Probabilites*, *inference*, *linear mixed-effect models and information theory*.

03/2018 Teacher at AIMS Cameroon in Limbé for 3 weeks. 30-hour course on *Probabilities*, *information theory*, *learning and inference*.

2015-2019 *Teacher at SISSA. Various 10 to 20-hour courses on Probabilities*, *statistical inference*, *frequentist and bayesian statistics*, *linear mixed-effect models*, *information theory*.

2009 Teaching assistant in mathematics to 2*nd*-year students in biology at the University Pierre & Marie Curie, Paris, France. 30 hours on *Linear algebra*, *differential equations*, *probabilities*.