

# Laurent U. Perrinet

Researcher in Computational Neuroscience  
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## Research interests

I am interested in bridging the gap between the structure and the function of neural systems by showing how they optimally adapt to the statistics of natural environments.

Born: February 23rd, 1973—Bordeaux, France  
Nationality: French

## Current position

since 2004

*Researcher (CR1)*, Institut de Neurosciences de la Timone (INT).

## Areas of specialization

Spatio-temporal inference in low-level sensory areas.  
Motion Perception.  
Free-energy and active perception.

## Appointments held

2010–12	Visiting Scholar, UCL (London, UK). Karl Friston’s theoretical neurobiology group.
1999	Research Scholar, USAFB (Rome, NY) / University of San Diego in California.
1997	Research Scholar, Jet Propulsion Laboratory (Nasa), Pasadena, California. Department of Terrestrial Science, Imaging Radar Laboratory
9/1995-6/96	Engineer at Alcatel, Vienna (Austria). Department of Voice Processing Systems.

## Education

1999-2003	PhD in Cognitive Neuroscience, ONERA/DTIM, Toulouse (France)
1993 - 1998	MSC in Engineering SUPAÉRO (Toulouse, France), one of the leading French Engineering Schools ("Grandes Ecoles"). Specialization in stochastic models for signal and image processing.

## Selected publications

### JOURNAL ARTICLES

- 2012 Karl Friston, Rick A. Adams, Laurent U. Perrinet and Michael Breakspear, "Perceptions as Hypotheses: Saccades as Experiments", **Frontiers in Psychology**.
- 2012 Claudio Simoncini, Laurent U. Perrinet, Anna Montagnini, Pascal Mamassian and Guillaume S. Masson, "More is not always better: dissociation between perception and action explained by adaptive gain control", **Nature Neuroscience** (in press).
- 2012 Paula S. Leon, Ivo Vanzetta, Guillaume S. Masson and Laurent U. Perrinet, "Motion Clouds: Model-based stimulus synthesis of natural-like random textures for the study of motion perception", **Journal of Neurophysiology**.
- 2012 Laurent U. Perrinet and Guillaume S. Masson, "Motion-based prediction is sufficient to solve the aperture problem", **Neural Computation**.
- 2011 Guillaume S. Masson and Laurent U. Perrinet, "The behavioral receptive field underlying motion integration for primate tracking eye movements", **Neuroscience and biobehavioral reviews**.
- 2010 Laurent U. Perrinet, "Role of homeostasis in learning sparse representations", **Neural Computation**.
- 2007 Frederic Barthelemy, Laurent U. Perrinet, Eric Castet, and Guillaume S. Masson, "Dynamics of distributed 1D and 2D motion representations for short-latency ocular following", **Vision Research**.
- 2007 Laurent U. Perrinet and Guillaume S. Masson, "Modeling spatial integration in the ocular following response using a probabilistic framework", **Journal of Physiology (Paris)**.
- 2004 Laurent U. Perrinet, Manuel Samuelides and Simon Thorpe, "Coding static natural images using spiking event times : do neurons cooperate?", **IEEE Transactions on Neural Networks**.

### BOOK CHAPTER

- 2007 Laurent U. Perrinet (2007) "Dynamical neural networks: modeling low-level vision at short latencies". In *Topics in Dynamical Neural Networks: From Large Scale Neural Networks to Motor Control and Vision*: volume 142 of **The European Physical Journal (Special Topics)**. Springer Berlin / Heidelberg.