

Forum 2015 du GDR-vision

les mercredis 2 et jeudi 3 décembre 2015

Université Grenoble-Alpes



**Program: GDR-Vision, 2015**

**GIPSA-LAB salle Mont Blanc**

**Organizers**: Alan Chauvin (LPNC, UGA), Michel Dojat (INSERM, UGA), Laurent Madelain (Univ Lille)

**Local organization committee**: David Alleysson, Alan Chauvin, Michel Dojat, Nathalie Guyader, Louise Kauffmann, Martial Mermillod

**Wednesday, December 2**

13h45 – Introduction

Session 1: Moderator A. Chauvin

14h00 - **Visual perception: Where do 3-12 months-old infants' gaze.**
*David Meary, Olivier Pascali*

14h20 - **Superior colliculus processing of luminance contrast in elderly and Parkinson patients***Emmanuelle Bellot, Véronique Coizet, Kenneth Knoblauch, Elena Moro, Michel Dojat*

14h40 - **Representation of egomotion in non-human primate**
*Benoît Cottereau, Samy Rima, Yves Trotter, Andy Smith, Jean-Baptiste Durand*

15h-15h40 – **Short Presentations of Posters**

Potentiels évoqués par les fixations oculaires lors de l'analyse d'expressions faciales émotionnelles
*Raphaëlle Roy, Emmanuelle Kristensen, Anna Tcherkassov, Bertrand Rivet, Anne Guérin-Dugué*

Elaborating an experimental protocol to evaluate the influence of spectral power distribution on discomfort glare
*Matthieu Iodice, Sophie Jost*

Humans exhibit discrete confidence levels in perceptual decision-making
*Lisi Matteo, Gianluigi Mongillo, Andrei Gorea*

From Fast Visual Perception to Frontal Emotional Inhibition.
*Brice Beffara, Nicolas Vermeulen, Amélie Bret, Martial Mermillod*

Looking for symmetry: Fixational eye movements are biased by image mirror symmetry
*Anna Montagnini, Andrew Meso, Jason Bell, Guillaume Masson*

Computer-aided diagnosis of Alzheimer's disease based on structural MRI : A local feature-based approach
*Olfa Ben Ahmed*

15h40-16h30 Coffee Break + Posters

16h30- **Integration of face and voice contributions to gender comparisons.**
*Clement Abbatecola, Peggy Gerardin, Kenneth Knoblauch, Henry Kennedy*

16h50 - **Gaze behaviour provides a gender fingerprint**
*Antoine Coutrot*

17h15- **Keynote Lecture** – Patrick Cavanagh (Université Paris Descartes and Dartmouth College)

Moderator: C. Chauvin

*Seeing the past but looking at the present.*

With Matteo Lisi, we have examined a moving stimulus that drifts in one direction with an internal pattern that drifts in the orthogonal direction (a double drift stimulus). In this case, the stimulus path is perceived with a large, accumulating shift in position that makes the apparent orientation of the path deviate by 45°or more from its actual path, a shift several times larger than the discrimination threshold for motion direction. This position shift accumulates for up to 1 second after which the perceived position resets to the physical location. The duration of this bias from past sensory signals greatly exceeds persistence effects from iconic memory. Unlike other memory effects that outlast iconic memory (visual short term memory), this bias is not found in a recall context but in immediate perception. Although we might expect action to be directed to the perceived location of targets, eye movements made to this double drift target track the actual location quite faithfully, showing only a small, local shift in response to the internal motion that does not accumulate over time. These results highlight a fundamental difference between perception and gaze control, suggesting that while our perceptual experience builds upon the history of previous sensory signals, eye movements use only the most recent information available.

18h15-20h00 Welcome Cocktail

**Thursday, December 3**

Session 2: Moderator L. Madelain

9h00 – **Influence of fixation clusters on reading speed in macular disease***Eric Castet*

9h20 - **Viewing-position effects in meaningless object viewing**
*Lotje van der Linden, Gregory J. Zelinksy, Françoise Vitu*

9h40 **Motor reactivity to target onset can be modulated by the temporal binding with irrelevant signals from a distinct modality**

*Manuel Vidaland Laurent Madelain*

10h **Attending and inhibiting stimuli that match the contents of visual working memory: Evidence from eye movements and pupillometry**
*Sebastiaan Mathôt, Elle Van Heusden, Stefan Van der Stigchel*

10h20-11h00 Coffee Break + Posters

11h00-12h00 **Keynote Lecture** – Karl Gegenfurtner (Justus-Liebig-Universität, GE)

Moderator: M. Dojat

*Vision and eye movements*

The existence of a central fovea, the small retinal region with high analytical performance, is arguably the most prominent design feature of the primate visual system. This centralization comes along with the corresponding capability to move the eyes to reposition the fovea continuously. Past research on perception was mainly concerned with foveal vision while the eyes were stationary. Research on the role of eye movements in visual perception emphasized their negative aspects, for example the active suppression of vision before and during the execution of saccades. But is the only benefit of our precise eye movement system to provide high acuity of small regions at the cost of retinal blur during their execution? In my talk I will compare human visual perception with and without eye movements to emphasize different aspects and functions of eye movements. I will show that the interaction between eye movements and visual perception is optimized for the active sampling of information across the visual field, and for the calibration of different parts of the visual field.

12h00-13h30 Lunch

Session 3: Moderator M. Dojat

13h30 **The role of the superior parietal lobule in attention for space and attention for multifeatured shapes processing**
*Laure Pisella*

13h50 **Contextual differential saccadic adaptation controlled by the target color and/or shape***Sohir Rahmouni, Jerémie Jozefowiez, Laurent Madelain*

14h10 **From its spatio-temporally distributed representation in the brain to the here-and-now foveation of a moving visual object**
*Laurent Goffart*

14h30- 15h30 L. Madelain: Business meeting & closing

**Evénement satellite**

Cours : Traitement d’informations en sciences de la Vision

Lundi 30 Novembre et Mardi 1er Décembre

Maison des Sciences Humaines, Grenoble

**Program**

**Organizers**: K. Knoblauch, JM Hupé, R. Laboissière

**Monday, November 30**

14h00 – 17h00 The “new” statistics: times for a quiet revolution

Basics of sampling and inference theory: the correct interpretation of p-values and why we should use Confidence Intervals instead.

A primer on Bayesian statistics: should they really replace frequentist statistics?
Beyond the t-test: Some problems (and solutions) raised by complex Neuroimaging data

Jean-Michel Hupé (CERCO Toulouse)

**Tuesday, December 1**

9h00 – 12h00 Statistical methods for Signal Detection Models in Psychophysics

I will present Signal Detection models for simple choice experiments and explain the statistical basis of estimating their parameters based on maximum likelihood approaches.  I will demonstrate a simple approach to fitting and framing such models using the Generalized Linear Model.  Finally, I will show how to extend the methods to experiments for scaling visual appearance.

Kenneth Knoblauch (U846, Lyon)

14h-17h00 - Mixed models (GLMM) for vision data Rafaël Laboissière (LPNC, Grenoble)

In this course, I will present the Generalized Linear Mixed Models (GLMM). Some theoretical aspects will be treated, but the emphasis will be on the practical aspects of using the lmer package of R.  Examples will be given on the application of GLMM for fitting data where multiple random factors are present, as well as on the use of statistical inference tools for analyzing the fitted models.

Les participants sont invités à se munir d’un portable avec le language R.