

Guillaume Masson is a neuroscientist working on visual motion processing for perception and oculomotor control in human and non-human primates. He obtained his PhD in 1994 at the Université de Provence and was then a post-doctoral fellow with Dr Frederick A Miles at the Laboratory of Sensorimotor Research (NEI/NIH), Bethesda (USA). He was recruited at CNRS in 1997 and founded the research team Inference in Visual Behavior (INVIBE) in 2004. INVIBE team federate psychophysicists, neurophysiologists working in humans and monkeys with computational neuroscientists. In 2012, he founded the Institut de Neurosciences de la Timone with the ambition of tightening neurobiology and cognitive neurosciences for an integrative approach of how brain functions such as perception, motor control or social interactions emerge from the dynamics of neural circuits at different scales from molecules to cognition. Its mission in particular is to decipher how small- and large-scale cortical and spinal neural networks interplay to control complex behaviors in different animal models, in particular monkeys. Moreover, INT promotes translational research activities in partnerships with clinical units at the Marseille University Hospitals (AP-HM) in neurology, psychiatry, ophthalmology and neuroimaging. Within the INVIBE team, Guillaume Masson's research interests focus on the mechanisms of visual motion integration and segmentation. These mechanisms are essential to parse the visual flow from natural scenes into objects that ones can perceive, track and capture. We investigate these processing at behavioral and neurophysiological levels in humans and monkeys and model their underlying computational principles using probabilistic inference. In particular, one of the main challenges is to better understand how nonlinear interactions between selective neuronal populations working at different spatiotemporal scales shape the neuronal dynamics of motion speed and direction perception. These computational principles are shared by many sensory systems. He has published more than 80 research articles in international disciplinary and interdisciplinary journals.