



Stéphane Viollet

CNRS Researcher Director, Institute of Movement Science (ISM)
and Head of the Biorobotics team (Marseille, France)

23 May 2017 – 10:30 a.m

Université de Technologie de Compiègne
Room GI 042 – Bâtiment Blaise Pascal (Génie Informatique)
Avenue de Landshut
60200 Compiègne

From fly to robot and vice versa

Abstract:

The Biorobotic approach is a meeting point where robotics and neuroscience are used to try to explain the behaviour of animals, especially winged insects (fly, bee, wasp ..) and to model the processing of the sensory modalities used by these outstanding animals. The neurophysiology is also used to better understand the sensorimotor reflexes at work in the animals. For example, recent studies carried out at our laboratory focused on the graviception in fly, i.e., the ability of the animal to assess its orientation with respect to gravity. Would it be possible that a fly, able to achieve exquisite manoeuvres, could not have any clue of its body tilt with respect to gravity during flight? Could future robotic applications could take a great benefit of this lack of graviception and more generally of a bio-inspired approach? Several fly-inspired visual sensors as well as autonomous bio-inspired robots will be presented in this talk.

Bio:

Stéphane VIOLLET, 44, is a CNRS researcher director at the Institute of Movement Science, Aix-Marseille Université and head of the Biorobotics team. He received the master's degree in control engineering from the University of Bordeaux 1, Bordeaux, France, and the Ph.D. degree from the National Polytechnic Institute, Grenoble, France, in September 2001. He obtained a CNRS permanent position in 2003. His interests include sensory-motor reflexes in flies, retinal micro-movements, control and design issues, bio-inspired control strategies for aerial robots. He is the leader of the development of autonomous robots and innovative visual sensors for robotics (artificial compound eye, hyperacute sensors, artificial retinas) and involved in several national and international projects on these topics as principal investigator and local coordinator and CurvAce project (EC ICT/FET open) as principal investigator for Aix-Marseille Université. He is the author of more than 60 publications, 8 patents and recipient of several best paper awards and nominations (Journal La Recherche in 2005, IEEE ICAR, IEEE Sensors and Living Machines conf.).