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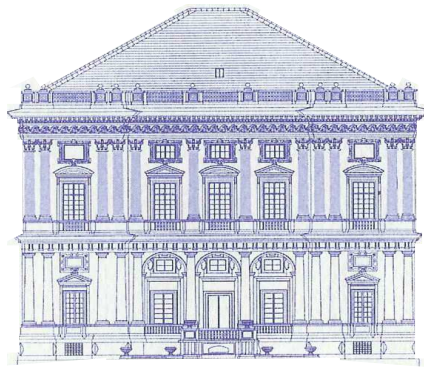
AVVISO DI SEMINARIO

"Micro-Aerial Vehicle Configurations for Outdoor/Indoor Surveillance Mission"

Prof. Jean-Marc Moschetta

Institut Supérieur de l'Aéronautique et de l'Espace
Université de Toulouse, France

Giovedì 17 Aprile, 2008 – ore 10.30
Facoltà di Ingegneria,
Aula A8, Piano Nobile
Villa Giustiniani Cambiaso



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Micro-Aerial Vehicle Configurations for Outdoor/Indoor Surveillance Mission

Fixed-wing micro air vehicles (MAV) are very attractive for outdoor surveillance missions since they generally offer better payload and endurance capabilities than rotorcraft or flapping-wing vehicles of equal size. They are generally less challenging to control than rotorcraft in outdoor environment and allow for a dash capability to escape enemy attention. On the other hand, they usually fail miserably to perform vertical take-off and landing (VTOL) and sustain stable hover flight which proves to be crucial for urban surveillance missions including building intrusion. The present talk describes the possibility to improve the aerodynamic performance of fixed-wing MAV concepts so as to allow for true hovering capabilities and still maintain high cruise speed for covertness.

Biographical sketch of Jean-Marc Moschetta

Dr Jean-Marc Moschetta, presently Professor of Aerodynamics at the French Institute of Aeronautical and Space Sciences (ISAE), graduated in 1987 from the "Ecole Supérieure de l'Aéronautique et de l'Espace" (SUPAERO), Toulouse, France. From 1987 to 1991, he worked as a research engineer at MBDA Missile Systems in the Theoretical Aerodynamics Department where he was responsible for developing Navier-Stokes computational methods as applied to tactical missiles. In 1991, he received a PhD in Aerodynamics with high honors and a position of Assistant Professor in Aeronautics at SUPAERO. In 1994-95, he was appointed as a Visiting Associate Professor of Aeronautics at the Graduate Aeronautical Laboratory of Caltech, Pasadena. In 2000, Dr Moschetta received his Habilitation Degree and initiated a research group on micro aerial vehicles funded by the French Armament Procurement Agency. He organized and chaired the first European Micro Unmanned Air Vehicle Conference and Flight Competition in Toulouse in 2003, in collaboration with Braunschweig University. Since then, he has been actively involved in several MAV competitions and conferences in Europe and in the US, either as co-organizer, technical chair, competition judge and invited lecturer. He has recently chaired the 3rd US-European Workshop and Flight Competition on MAV Systems (MAV07) that was held in Toulouse in September 2007. In 2007, he received the Academic Palms at the rank of Knight for distinguished contributions to French education. Dr Moschetta's current research activity is focused on the development of rotary- and fixed-wing micro-air vehicles, including propeller-wing interaction, ducted micro-rotors and the use of piezo-actuators to control nano-air vehicles. He currently collaborates on the design of coaxial MAV tail-sitters with Professor Sergey Shkarayev from the University of Arizona and has been recently granted funds by the French Ministry of Defense for the construction of a new low-Reynolds wind tunnel facility devoted to Micro Aerial Vehicle studies.